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ABNORMAL HYPNOTIC PHENOMENA

A Survey of Nineteenth-Century Cases

Edited by

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VOLUME III

Russia and Poland

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Italy

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Spain, Portugal and Latin America

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GENERAL INTRODUCTION

The object of the present series of volumes is to fill a gap in the literature of hypnotism as far as a number of countries is concerned both in the Old and New Worlds. Generally speaking, accounts of alleged paranormal phenomena occurring in the mesmeric and hypnotic states have been omitted by writers on hypnotism and no detailed treatment of this aspect of the question has so far been published.

The main reason why this gap in the literature of hypnotism exists is that in the nineteenth century interest in mesmerism was aroused and maintained not only by accounts of the therapeutic value of mesmeric treatment and its use as an anaesthetic agent in surgery, but also because paranormal phenomena were said to occur with very many of the somnambules. Thought-transmission, eye-less-sight, travelling clairvoyance and mental suggestion at a distance were all said to occur constantly; and the fear of being thought unorthodox and tainted by the "occult" effectively prevented many serious men of learning from becoming too closely associated with the mesmerists, both medical and lay.

The aim here, therefore, is to raise the curtain on the almost unknown and forgotten activities of the mesmerists of the nineteenth century, while concentrating on the paranormal aspects of their work. Since reports of such phenomena occurring in the hypnotic state begin to disappear before the end of the nineteenth century and are rarely reported in the first part of the twentieth, the account of mesmerism here presented ceases at the end of the nineteenth century. Although in some countries of Europe reports of paranormal phenomena in mesmerism are far slighter than others, attempts have been made to give a general picture of the scene while paying greater attention to countries like France, Germany and England, where a mass of material exists from which it is hoped a representative collection of cases has been examined.

In each section the opinions and conclusions of the contributor are his or her own. Great care has been taken to avoid mistakes, although it cannot be hoped that a work of this magnitude will be free from errors, and both the Editor and the contributors will be grateful to any readers for their corrections and criticisms.

The early history of hypnotism in Russia has many points in common with that of Poland. The disturbed conditions prevalent in both countries during the nineteenth century were hardly conducive to systematic experiments in this field and in both countries it was late in the century when serious interest was awakened among scientific men. In Russia the trend of thinking was rather along physiological than psychological lines, while in Poland Dr. J. Ochorowicz, the leading experimenter in this field, published his principal work in French. Neither country produced any outstanding workers, if we exclude the names of A. N. Khovrin in Russia, who is known mainly for his investigation of a single case, and Ochorowicz himself, whose work was largely accomplished outside Poland.

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Hypnotism in Russia 1800-1900

Introduction

Any contemporary Western researcher undertaking the task of describing a scientific or social movement in nineteenth-century Russia will be unavoidably confronted with the following handicaps : (1) The original Russian sources are scarce and in some cases totally inaccessible as the materials existing in Russian libraries are, with very few exceptions, not available to the Western scholars. (2) The lack of an adequate supply of Russian scientific works and journals of the nineteenth century in European and American libraries. (3) The strict ideological bias affecting *all* scientific publications that appeared in Russian after the revolution of 1917 and are more or less available outside of Russia ; owing to this bias, it is practically impossible to obtain a clear picture of what took place in Russian in any field, if the pertaining facts disproved or contradicted the prevalent ideology.

This is precisely the situation in the field we are now dealing with, namely mesmerism, animal magnetism and the paranormal phenomena said to be observed during the practice of it. First of all we notice a total lack of any historical survey by any Soviet scholar of the movement in question ; this is a direct result of the planned purge of scientific thought in the USSR of whatever did not agree with the orthodox philosophy. With the field of psychology dominated exclusively by Pavlov and his followers, it seems certain that an objective approach to mesmerism and animal magnetism could find no room therein.

With the end of the Stalinist era in 1953 and the advent of the so-called " thaw " the study of psychology with its wide and varied ramifications, from psycho-analysis to parapsychology, also entered a new phase, but no change took place in the essential approach of the Russian scientists which was still based exclusively on dialectical

materialism. Consequently, no matter how scholarly appear the works of the contemporary Russian writers in this field (L. L. Vasiliev, M. S. Lebedinski, *et al.*), we look in vain for a reference to any Russian scientists from the past century who were not firmly grounded in a materialistic attitude, such as Velianski, Butlerov or even Khovrin, whose classic study of the " Clairvoyant from Tambov " is of historical importance as one of the best documented cases of psychometry.

Nevertheless, making the best use of all available sources, we have tried to make a fairly comprehensive and exhaustive study of the theory and practice of animal magnetism in Russia between 1800 and 1900. It should be mentioned that the term " mesmerism " was very seldom used there, even at the beginning of the nineteenth century, which is probably due to the influence of Parrot (1816) and Velianski (1818) whose works on animal magnetism were the first to appear, as well as to an early (1838) translation of Baron J. D. Du Potet's *Cours de Magnétisme Animal* (Paris, 1834).

Subsequently the term " hypnotism ", coined by Dr. James Braid from Manchester in the 1840s, became generally accepted in Russian scientific and medical circles, even if with a thirty-year lag ; nevertheless, the majority of writers and practitioners used it interchangeably with " animal magnetism " right until the close of the last century, disregarding the very clear distinction between the two phenomena succinctly formulated by Dr. J. Ochorowicz during the International Congress of Psychology and Physiology in Paris in 1890, when he said :

> " Magnetizing means to act on another person by certain methods without specific intention to produce sleep or a similar state ; hypnotizing means to act with the intention to produce sleep or a similar state."

Early Research in Animal Magnetism in Russia

Mesmerism, or animal magnetism (which term we shall use henceforth following the local practice) never enjoyed in Russia such wide and frequently uncritical vogue as in the Western countries. This situation was due to the fact that, owing to specific historical and geographical factors, cultural developments in the West took a considerable time to reach Russia. Consequently, the first and strongest wave of popular interest in animal magnetism, inaugurated by Mesmer himself (1734-1815), had practically died out in Europe before it reached Russia ; and when this took place, the aura of miracle and mystery surrounding at first the so-called

" mesmeric phenomena " had been replaced, at least in part, by a scientific approach.

Nevertheless, there must have been a great many cases of use and abuse of animal magnetism in Russia even at the beginning of the nineteenth century, since we find as early as 1816 the first attempt to impose legal regulation of this practice to curb the charlatanism for which animal magnetism offered a fertile soil. Consequently, animal magnetism was allowed only as a method of treatment, and only to physicians ; it was further recommended that its practice should be limited to the university towns and be under medical supervision. Moreover, physicians were required to make notes of their observations during each particular case. It is noteworthy that such a progressive measure (probably one of the first of its kind, if not *the first*) should appear in an otherwise backward country, but Russia was always a land of paradox, and still is.

On the other hand there was very little, if anything, written on the subject until the appearance of several serious works: firstly G. F. Parrot's *Coup d'Oeil sur le Magnetisme Animal* (1) published in 1816 in French, and then two by J. R. Lichtenstaedt and finally Danilo Velianski's[1] *Zhivotniy Magnetizm* (2) [Animal Magnetism] which was published in 1818 and constitutes the first major attempt to explain from a scientific standpoint the baffling phenomena of animal magnetism to the Russian educated classes.[2]

Of these early writers Georg Friedrich Parrot, a German and a professor of physics, discussed the phenomena of animal magnetism from his own standpoint. In his opinion, physicians were not suitable as investigators, since they regarded the study of physics in medicine as superfluous and their whole attitude led them to regard the marvellous with favour, while tending to reject natural laws. Indeed, he added, if galvanism had been left to medical men, the situation regarding that study would be as obscure as it is in magnetism. Parrot maintained that physics would lead to a clearer understanding of magnetism and that claims that the influence of the will could be exercised over immense distances were quite absurd. Parrot hazarded the guess that since, as he thought, there was a close relation between animal magnetism and electricity, it might easily be discovered that the so-called magnetic fluid was nothing other than a manifestation of electrical energy.

[1] Velianski's family name was Kavunnik.

[2] The first two parts of the volume are actually a translation of C. A. F. Kluge's book, *Versuch einer Darstellung des animalischen Magnetismus als Heilmittel*, a second edition of which was published in Berlin in 1815.

The second of these early writers was another German working in Russia, Jeremias Rudolf Lichtenstaedt (1792-1849), who published in St. Petersburg in 1816 his *Untersuchungen über den thierischen Magnetismus* (3). In this book Lichtenstaedt aimed at giving the public at St. Petersburg some elementary instruction in animal magnetism. The volume was not addressed to physicians, nor to those who were already acquainted with the subject, but rather to the lay public who wished to learn the most essential features of the subject. At the same time the author wished to point out the way by which magnetism was to be judged. He did not agree with Parrot's opinion, expressed in the latter's *Coup d'oeil sur le magnétisme animal*, that physicians were not suitable investigators of animal magnetism, which was a matter to be enquired into by physicists. Lichtenstaedt maintained that medical men who were acquainted with the nature of diseases were alone able satisfactorily to judge the subject, which itself was a matter for experiment. It was simply a question of choosing a number of patients who did not even know what magnetism was and then magnetizing them. Medical societies had been established by governments to examine animal magnetism, but so far with little success.

Why not, he asked, have faith in the experiments already made in France and England, as such incredulity as had been expressed was harmful to scientific progress? He maintained that somnambulism had for a long time done great harm to the practice of magnetism, because magnetizers had confused the one with the other and had thought that magnetic treatment could not exist without somnambulism, a mistake which was even prevalent amongst the public. He believed that the phenomena of somnambulism should be separated from those of animal magnetism. When this was done it would become easier to conduct researches on somnambulism.

It is clear that Lichtenstaedt believed that magnetic effects were all of a physical kind, although he found it difficult to give a satisfactory definition of animal magnetism itself. In his work he does not mention manipulation but simply refers the reader to Kluge. Moreover, he did not believe that instruments were necessary, although they were sometimes very useful, such as metal wands, glass plates, magnetized water and even the *baquet*. He never used mirrors, music, or magnetized trees, but agreed that metal wands produced effects in some persons which were more pronounced than those which followed simple touches from the fingers.

In dealing with the *baquet* he thought that many advantages resulted from its use, but that it should be used with caution. Unlike

others, he did not believe that there was any general law, such as propounded by Parrot, or that the magnetizer, after having magnetized the subject, must feel a particular effect which could only proceed from magnetism. Similarly, he had no belief in the degrees of magnetism put forward by Kluge and indeed thought that many errors had arisen from the assumption that these degrees existed.

Lichtenstaedt was primarily interested in the cure of the patient: whether the patient fell into a sleep, or was clairvoyant, was of little importance. Magnetizers must never attempt to produce one effect rather than another. It was both indiscreet and dangerous to take a path which might not lead to the cure of the patient and even the admission that there were different degrees of clairvoyance harmed magnetism, since it disposed towards the belief that, generally speaking, there could not be good magnetic effects without somnambulism. But above all he believed that it was harmful to juxtapose, as Parrot had done, these very rare phenomena such as clairvoyance with commoner manifestations, thus confusing certainty with uncertainty in such a way that finally it was difficult to distinguish the one from the other. Somnambulism associated with the state of clairvoyance, he maintained, was seen rarely and it was very important to distinguish it from the commoner phenomena, since he agreed that clairvoyance was very difficult to explain. He maintained that it was necessary to distinguish magnetic somnambulism from ordinary sleep-walking because one was natural and the other brought on artificially.

In discussing the medical applications of magnetism, Lichtenstaedt stated that as a general rule any subject who was easily put to sleep would respond to magnetic treatment, but it was not easy to decide which diseases would thus be successfully treated. Usually, chronic maladies responded, but in the more dangerous diseases, where it was an urgent matter of life and death, he did not think that magnetism should be attempted. After having discussed the various complaints which could be dealt with through magnetism, he mentioned cases of actual organic internal conditions where he thought that cures had sometimes been successful.

As to the nature of magnetism itself, Lichtenstaedt was inclined to reject most of the galvanic and electrical theories current at the time. His own views approached more nearly those dealing with the obscure phenomena which arose from the power of sympathy as Hufeland had already pointed out.[1]

In 1817 Lichtenstaedt wrote a paper (4) in which he maintained

[1] Evidently referring to Friedrich Hufeland's *Über Sympathie* (Weimar, 1811).

that one of the most remarkable attributes of animal magnetism was the way in which it could be communicated to inorganic bodies. Just as a person could act on another person, so could magnetism transfer its curative virtue to inorganic bodies. It was this fact which led people to assert that the magnetic fluid actually existed. But the belief in this fluid, far from throwing light on the subject, on the contrary plunged it into even deeper obscurity. No such fluid could be recognized and therefore it appeared to Lichtenstaedt unsuitable to put forward such a theory. Several magnetizers maintained that during magnetic treatment it was of the highest importance to imagine that through their own will they had the power of transmitting something emanating from themselves, an opinion which he maintained to be quite absurd. Indeed, in Lichtenstaedt's opinion, the suggestion that success in the practice of magnetism required faith and a certain disposition had produced a mystical aspect which had not a little contributed to prejudice people against the subject.

The predictions of the somnambules, he maintained, were derived from three main sources. Firstly, they were connected with what they had seen in the waking state either at the time or previously and in this latter case their imagination received fresh energy which enabled them to recall facts from memories of long ago. The second cause was the influence that persons who approached the somnambules were able to exercise on them and this applied especially to their magnetizer. It could thus happen that their prevision was in a sense foreign to themselves and was not always to be found within the range of their own intellectual processes. The third cause, independent both of their own memories and of the influence of the magnetizers, was of a much more lofty order. It was entirely free from our ordinary imaginative ideas : it was the proof that there are things beyond the range of our own understanding.

It was necessary to consider each of these three principles if the true value of somnambulistic predictions was to be appreciated. This presented grave difficulties ; the predictions of the third class were the only ones which, taken in themselves, always presented a truthful character. Those belonging to the other classes were simply those which proceeded from human beings and were susceptible of error. It was, therefore, important to take account of the incontestable truth of some of the predictions made by the somnambules while at the same time allowing for errors of which they were the source.

Speaking of the magnetic fluid, Lichtenstaedt found it difficult to understand the levity and assurance with which several magnetizers, especially in France, assumed the existence of the magnetic fluid and, starting from this hypothesis, used this theory as the foundation on which to erect their systems. It was true that magnetism caused sensations of heat or of oppression to be felt. Sometimes also bright sparks were seen and buzzings and ringing in the ears and many other remarkable effects. But, he asked, could it be deduced from this that there was actually a magnetic fluid?

Having thrown doubts on the existence of the magnetic fluid, he went on to discuss various theories held by other magnetizers, such as Deleuze, but in these discussions paid little attention to the emergence of supposed paranormal phenomena during the magnetic sleep. When he did discuss these matters, he gave it as his opinion that there was nothing more likely to hinder the progress of magnetism than stories of marvellous phenomena in the somnambulistic state, which had nothing in them which could be presented with the clarity which the situation demanded and had little to do with the principal points of view from which magnetism should be observed, namely, the apparent similarity of the phenomena to those which in nature have relation to galvanism and electricity and the use of magnetism as one of the most efficacious means of curing disease.

It would seem that Lichtenstaedt's views concerning these phenomena had some similarity to those of certain of the early French magnetizers. For example, he maintained that whatever importance somnambulistic clairvoyance might have for the physiologist, and however appropriate it might be to probe the secrets of nature to their source, this clairvoyance ought not to be presented as the principal object of research until magnetism itself had been recognized and firmly established. For example, there were people who had scarcely had one or two patients under magnetic treatment and who, by chance, had been allowed to observe astonishing examples of somnambulistic lucidity. It would always be wrong to publish these effects without thought, for they deflected from public esteem the points of view from which magnetism should first of all be regarded and at the same time they could not offer anything new to the curious, since examples had already been presented by a great number of magnetizers. It would be even more wrong for lay practitioners to act in this way, since they were not able to appreciate morbid symptoms.

Having given these short criticisms of the views of others and of himself on clairvoyance in the magnetic sleep, Lichtenstaedt turned

to the general picture of the subject which Stieglitz presented to the German public in 1814.[1] He maintained that there was much in Stieglitz's presentation which must be rejected by all magnetizers. For example, Stieglitz maintained that factors which increase, diminish or prevent electrical phenomena must exercise the same influence on the phenomena of animal magnetism. This opinion Lichtenstaedt considered to be entirely false, except perhaps in the case of silk, and even in this case disagreement had been registered. From his criticism of Stieglitz it is clear that he fully accepted the statements of some of the early French magnetizers that certain somnambules could be affected at a distance solely through the will of the magnetizer.

Summing up his impressions then, Lichtenstaedt, who was clearly one of the more moderate supporters of magnetism and its claims, was of the opinion that the opponents of this discovery were always taking refuge in words, basing their opinions and conclusions mainly on prejudice. Indeed, he ventured to point out that it was difficult to understand how opponents dared continually to dwell on the deadly effects of magnetism when even in his own time a great number of unfortunate results had occurred through the employment of drugs considered by physicians to be some of the most efficacious in medicine.

The third of these early writers, Velianski, was a medical man, a surgeon and professor of physiology and pathology at the Imperial Academy of St. Petersburg, thus possessing valid scientific credentials, and his rationalistic approach, based on physics, is characteristic of subsequent Russian researchers throughout the nineteenth century, the last of whom, Dr. Pogorelski, published his voluminous treatise on animal magnetism (5) in 1898. For this reason we deem it of interest to give this work a closer scrutiny than it would deserve *per se*.

In his introduction, Velianski stated that among the physical discoveries of the last centuries animal magnetism was the most important. Although it was a force of organic nature, it provoked apparently miraculous phenomena which did not conform with the generally accepted concepts, so that it was surrounded by a welter of gross superstitions which prevented it from being properly studied. Today, he continued, animal magnetism was known and accepted by scientific circles. It had been introduced to the Russian public from Germany after the physicians of German origin had begun to

[1] This refers to Johann Stieglitz's *Über den thierischen Magnetismus* (Hannover, 1814).

apply it to treatment of diseases that could not be cured by other means. But there were still no Russian sources for studying animal magnetism and therefore there was little theoretical understanding of its nature and it still appeared to most people as an obscure and incredible phenomenon.

On the one hand, the magnetic fluid was everywhere accepted as a physical explanation of magnetic phenomena, whereas such fluid in fact did not exist. On the other hand, all the unusual possibilities of the magnetic state were attributed to singular changes occurring in the subject's soul, whereas such changes were contradictory to the very concept of a soul as an immortal entity. The magnetic sleep and the unusual sensations accompanying it were actually just as difficult to explain as natural sleep and the sensations or feelings experienced in the waking state. The former represented only one aspect of organic activity which, however, could not so far be explained by the usual considerations, be they physiological or psychological. To understand the magnetic sleep as well as the morbid condition of a person under treatment, one must first grasp the functioning of the human organism in the state of health. Therefore, taking naturalistic philosophy as his standpoint, Velianski advanced a theory of animal magnetism conceived in terms of physiology and pathology.

In dealing with the history and description of animal magnetism, Velianski stated that there were indications that animal magnetism had been practised in most ancient times by priests who used it secretly for their own purposes in temples and oracles. French missionaries had reported from China cases of healing by placing hands on the patients, a procedure which was typical for magnetizers, while in Europe similar practices had been described from the early Middle Ages. Kings in particular were believed to have had a healing power of touch, as for example Edward the Confessor[1] ; hence, no doubt, originated the French saying : *Le roi te touche, Dieu te guérit.*

Continuing, the author described the activities of Mesmer as a man responsible for the " discovery " of animal magnetism in modern times and analysed its various aspects, which he grouped into six stages. During the first stage the exterior sensations, even though subdued, were still active ; he called this stage *magnetic*

[1] For one of the earliest works on the King's Evil and the healing touch see William Tooker's *Charisma* (London, 1597), and cf. E. L. Hussey's " On the cure of scrofulous diseases attributed to the Royal Touch " (*Archael. Jour.*, 1853, X, pp. 187 ff.).

readiness. The second, when the sensitivity was partly suspended was *magnetic half-sleep*. In the third stage, *magnetic sleep* occurred when all external sensations and all contact with the outside world were stopped. In the fourth stage the magnetized person depended entirely upon his magnetizer who acted as an intermediary, capable of producing in his subject sensations, feelings and actions; this was a *somnambulist* state. In the fifth stage the patient could see clearly the inner mechanism of his body, the cause of his illness and the means to cure it ; this was called *clairvoyance*. During the sixth stage the subject entered into a superior state, the union with the whole of nature, whereby he became able to understand all phenomena, and was not limited by time and space ; this stage was called *secret illumination* and the phenomena of " stepping out of the body " could then occur.

In Chapter 2 of his book, following the West European writers, predominantly German, such as C. A. F. Kluge, A. Wienholt, C. W. von Hufeland, and C. Wolfart, Velianski described various methods of producing the magnetic state, namely : breathing on the patient (*souffle*), a fixed stare, or various hand manipulations (*passes*) which were a most common practice. Mental action alone could also produce magnetic sleep since it had been shown experimentally that a magnetizer could act on his patient at a distance by simply concentrating his thought. This practice, however, should in the author's opinion be discouraged, for even though animal magnetism could be applied to everybody without harm, the greater the sensibility of the subject the more caution should be used in applying it, especially when treating children, and as a rule it should not be used for *any other reasons* than healing the sick.[1]

Discussing the methods of magnetizing, Velianski subscribed to the opinion that not everybody could act as a magnetizer, and those who could do so were not always able to produce the desired effect. However, there existed means, both direct and indirect, of increasing the magnetic action. Among *direct* means Velianski mentioned conductors (two iron or steel rods), an insulator, electric current, mirrors and music. Of the *indirect* means, which increased the power of the magnetizer and strengthened the magnetic *rapport*, he considered that magnetized water, magnetized glass[2] and magnetized

[1] Cf. J. P. F. Deleuze (1753-1835), *Histoire critique du magnétisme animal*, 2 pts. (Paris, 1813), i, pp. 208 ff., who maintains that magnetic operations should only be directed towards healing the sick and doing good.

[2] See Joannes Heineken, *Ideen und Beobachtungen den thierischen Magnetismus . . . betreffend* (Bremen, 1800).

wood[1] seemed to have the strongest action and, even if not explained scientifically at this stage, had been proved experimentally to produce the state of somnambulism.

To the question of who and what could be best treated by animal magnetism the author answered that even if animal magnetism acted on everybody, it did not produce on everybody the same influence and in treatment its effect varied from person to person. On healthy people it acted weakly, its strength increasing when a person was ill with nervous diseases easier to cure, in particular epilepsy, catalepsy, St. Vitus' Dance, convulsions, local paralysis and all sorts of stomach disturbances.

In Chapter 3 Velianski discussed the theory of animal magnetism, and although in the former chapters he followed the theories and experiments of the Western writers,[2] there being no Russian researchers to consult, when it came to explaining the phenomena of animal magnetism he advanced his own ideas. His theory still showed the marked influence of such authors as Brugmanns,[3] but there were also distinct characteristics of independent thought, one could even say of very modern thought.

His basic thesis was the essential unity of Nature in all its aspects and he criticized the scientists who tried to explain various phenomena within their respective fields mechanistically, without considering other characteristics apparently in conflict with their theories.[4] On the other hand, and regardless of the fact that the alchemical philosophy had been extinct for at least two centuries, Velianski accepted the so-called theory of correspondences which looks at the human organism as a microcosm, in opposition to and in correspondence with the outer universe, the macrocosm. According to this theory, the main features of the universe are represented in man, whose nervous system, sensory perceptions, mental imagery, etc., are closely dependent on and influenced by the external environment and in constant reaction to it. Man himself can be interpreted in terms of the theory of the ether in its material aspect, with particular emphasis on the opposites.

Evaluation of scientific treatises on animal magnetism is not our purpose ; it seems, however, pertinent to point out the remarkable

[1] See C. A. F. Kluge, *Versuch einer Darstellung des animalischen Magnetismus als Heilmittel* (Berlin, 1811).

[2] Apart from the above-mentioned German writers, he mentions also the French writers A. A. Tardy de Montravel and J. H. D. Petetin.

[3] A. Brugmanns, *Philosophische Versuche über den magnetischen Materie* (Leipzig, 1784).

[4] Cf. M. B. Pogorelski (5).

insight of Velianski's approach : the recently established facts of cosmic radiation, the ever-growing emphasis on ecology, as well as the modern physical concept of matter being an aspect of energy—all this makes Velianski's theories strangely contemporary.

Elaborating his theory of correspondences, Velianski compared the normal and magnetic sleep, in both of which, he said, there were similar changes of the central nervous system, and since there were two main centres of nervous activity in the human organism, the organism itself could be regarded as a magnet with its two poles, or rather a whole system of magnets, and this constant polarity was a normal condition of our functioning. In a magnetic (or somnambulist) state, when the usual activity of our brain was suspended, this polarity became upset, which probably was the cause why certain sensory perceptions seemed reversed, so that the sense of touch might become a substitute for hearing or seeing. In a similar manner, the amazing sensitivity of the somnambules was a result of the abnormal strengthening of the sensitivity of circulatory nerves which acted, as it were, as the organs of sense.[1]

In his concluding remarks Velianski quoted another German work, C. A. A. von Eschenmayer's *Versuch die scheinbare Magie des thierischen Magnetismus aus physiologischen und psychischen Gesetzen zu erklären* (1816). Like most of the Russian researchers after him, Velianski, following Eschenmayer, tried to explain the phenomena of animal magnetism in purely scientific terms, and again his approach bears a mark of originality. Accepting Eschenmayer's physiological principles to a certain extent, he considered his psychological premises as insufficient and arbitrary. The true approach to physiology, according to Velianski, must include psychology, just as a " real " psychology could not be considered apart from physiology. Both represented the human organism in its twofold aspect, being nevertheless only parts of the same whole.

The Golden Age of Animal Magnetism in Russia (1880-1890)

In Great Britain the interest in mesmerism seems to have died out in the first decades of the nineteenth century and, probably due to the Napoleonic wars and general political upheavals that shook Europe at this time, a similar situation prevailed in France and Germany.

It is not surprising, therefore, that in Russia where the cultural

[1] Cf. Dr. Khovrin's theory below.

happenings from the West penetrated, as mentioned before, with considerable delay, practically no traces can be found of any activities in this field until the middle of the century, while more significant development took place only as late as the 1870s. Nevertheless, a certain number of medical and lay practitioners must have been steadily using animal magnetism in treating their patients, since we find records of their activities in *Rebus* (6) a weekly magazine published in St. Petersburg and devoted among other things to the investigation and description of what is now called paranormal phenomena. Under the heading *Iz proshlovo* [From bygone days] a number of such reports have been published, of which we shall mention the most interesting and best attested.

Thus, in *Rebus* (1888, No. 14, p. 141) there is an account of a certain Dr. Burgemeister, whose best known case was the cure in the 1830s of Princess Chakhovskaya. She was a deaf-mute, but when in the condition of magnetic sleep would answer by signs every question asked by the magnetizer and show paranormal knowledge of facts otherwise unknown to her, such as the death of her brother, killed in action in a far-away country.

About the same time (1830-1840) another magnetizer, Dr. Levental, earned a certain renown through his patient A. K. Blagova, whom he had cured of a serious nervous disorder and partial paralysis. Although this woman had no education, in a somnambulist state she was able to indicate in Latin what medicine would cure her. Dr. Levental was not familiar with the medicine she had named, but located it in a botanical dictionary and finally obtained it, though with considerable trouble. The prescription proved entirely effective. Subsequently she developed a gift of dictating prescriptions in Latin for other ailments. She is reported to have foretold, while in a magnetic sleep, the death of her friend Mrs. von Wiesin. Another medical practitioner, Dr. Beitraub, had also magnetized Dr. Levental's patient and witnessed her abnormal faculties.

More detailed information is supplied (*Rebus*, 1885, No. 47, pp. 419-420) on the magnetizer Andrey Ivanovitch Pashkov who lived in the first part of the nineteenth century and who, after having read one of Du Potet's books on animal magnetism, devoted himself to healing people by means of this method. Since the practice of magnetism by laymen was forbidden in Russia (see p. 4) Pashkov was arrested and sentenced to lengthy imprisonment, but never stopped his healing activities, which he conducted even during his prison term. One of his most brilliant cures was performed on

Ekaterina A. Vishkovata, sister of Count Korsakov. When she met Pashkov for the first time, on 26 February 1843, she had suffered for ten years from an advanced rheumatic-arthritic condition and could hardly drag herself about on crutches. Her hands were so swollen that she had trouble even in raising a glass and her eyes ached chronically. At the time she was nearly 60.

During the first séance that took place in the presence of her two brothers, Vishkovata fell into the magnetic sleep and felt a marked relief from pain, particularly in her hands. During the next séance, she declared, while in the somnambulist condition, that on 25 March she would be able to walk. On that day Pashkov put her to sleep in the presence of two doctors, who attested that she was in a genuine magnetic trance, and then ordered her to walk, whereupon she left her crutches and walked into the next room. From that day she recovered the use of her legs and was practically cured of her ten years' illness. Soon afterwards Ekaterina Vishkovata developed a gift for clairvoyance, of a slightly religious character, and she herself began healing the sick. Nevertheless, she constantly remained in magnetic *rapport* with her magnetizer ; and although he lived some 300 miles away, at his command she would fall into a somnambulist state and then perform her cures. This lasted until Pashkov's death.

In 1844 Pashkov had cured Yakov Turunov who had suffered for several years from deafness, treating him for over six months. Another of his more spectacular cases was the cure of the daughter of Major-General Focht in 1847. Her illness consisted of a complicated and serious nervous disorder and she also, like E. Vishkovata, became a clairvoyant in the course of her treatment and was able herself to perform cures and make diagnoses while in a magnetic state.

A. I. Pashkov received his patients each day from 10 to 2 o'clock or even travelled all over St. Petersburg visiting the more seriously ill. He began each magnetizing session with prayer and never used his subjects for any experiments except to cure the others. He died in 1850 of pulmonary inflammation, at the age of 57.

The best documented report on the early practice of animal magnetism in Russia is supplied by Pavel Betling, who was a magnetizer himself and published in *Rebus* some of his reminiscences under the title *Iz zametok magnetizera* [From the notebooks of a magnetizer] (1893, Nos. 15, 23 and 27, pp. 156-158, 231-232, 287). He recalled the beginning of his career and described how in April 1849, while he was away from home on business, he received a message that his wife had fallen dangerously ill. He rushed home

to find her in a critical condition : she was suffering from a dreadful headache, was partly delirious and the local doctors were quite helpless. It so happened that at the same time a friend by the name of Tchalygin, who lived on his property twenty miles away, came to visit them and hearing of Betling's wife's illness said that he had learned by accident some fifteen years before that he had the power to heal by magnetism and would gladly try it once more. The situation being desperate, he accepted Tchalygin's help and it proved most successful : his wife showed a marked improvement and during the third session announced in a somnambulist state that Tchalygin would cure her completely. Moreover she had developed the gift for clairvoyance and diagnosis while in the magnetic sleep and warned Tchalygin that magnetizing impaired his health and he should stop it at once. When he refused to interrupt her unfinished cure, she said (still in the somnambulist state) : " You have some magnetizing glass balls at home, let us bring them here ". Tchalygin did not know what she meant, but she indicated the exact place where the glass balls were to be found and, indeed, the man sent to Tchalygin's house found them without trouble. She had never been in his country house and had no knowledge of the glass balls, which Tchalygin had in fact acquired some fifteen years before but had never used and had entirely forgotten. The somnambule advised him to magnetize them and place them on her neck for subsequent treatments. This method was used with success, until one day (16 June 1849), again in the magnetic sleep, she told her husband that his own magnetism was much stronger and henceforth he began to use it regularly.

From then until her death on 10 April 1859 she helped him many times to diagnose and cure various cases, using also her somnambulist clairvoyance to answer questions on serious personal matters.

In his further reminiscences Betling tells in detail of his more outstanding cures among young as well as elderly men, whom he treated (always with the guidance and help of his somnambulist wife) for all sorts of diseases, ranging from abdominal and bladder ailments to acute throat conditions. It might be of interest to mention that during the treatment of a certain young man who suffered from neuralgic pains, the magnetizer himself fell ill ; and, according to his somnambule, this was the side-effect of treating his patient, who was a rather difficult subject. Betling recovered in a couple of days and was soon able successfully to conclude the treatment. This case was conducted under the supervision of a qualified army surgeon.

Betling, however, withdrew from practice after his wife's death in 1859, and during the following decade we observe on the Russian scene a marked scarcity of magnetizers of any renown, with only two exceptions, one of them being Semen St. Artemski from Moscow (who died in 1873), whose most famous case was a cure from cancer of the singer Guseva (*Rebus*, 1884, No. 4) and the other G. Tani, who practised healing with animal magnetism in St. Petersburg for thirty years, helping people from as far away as Samara (*Rebus*, 1890, No. 1, pp. 6-7, and 1890, No. 31, p. 264).

Russian society of that period did not seem otherwise to show much interest in the paranormal abilities of the human mind and the wave of Spiritualism that spread over Western Europe in the 1850s was still far away from the Russian shores, until it struck them in the form of the medium D. D. Home, who arrived in Russia in 1871 and stirred public opinion by his spectacular performances. The repercussions of Home's visit must have been varied and far-reaching ; the most significant one was recorded by *Rebus* (1882, No. 18, p. 252) in a short article reporting the founding of the Society for Psychical Research in London, where we read that the circular issued by the Society declared that even if there had been attempts at serious investigations (of paranormal phenomena) until now no scientific society had taken such a task upon itself. The circular, however, was wrong. The honour of establishing the first society of such a type belongs to Russia. In 1875 The Physical Society at the University of St. Petersburg (Fizicheskoye Obshchestvo pri Petersb. Universitete) named a commission from its members to investigate phenomena of this kind.[1] Evidently the

[1] This matter was dealt with in detail by Count Perovsky-Petrovo-Solovovo in his appendix to his translation of Frank Podmore's *Modern Spiritualism*. This translation was published in 1906. An account of this work, including a short discussion of Professor Mendeleiev's society, was included in a review of the work in question and published in the *Proceedings* of the Society for Psychical Research in Vol. XIX, Feb. 1907, p. 405. It is there stated that the Committee published in 1876 an unfavourable report and Mendeleiev himself continued his attack in a volume in which Mr. Aksakov was especially singled out for criticism. This book, *Materiali dla suzhdenia spiritisme* [Materials for a judgment on Spiritualism], St. Petersburg, 1876, is a lengthy volume which deals with the subject in general and Mendeleiev's own experiences in serving with the Commission. It appears that Aksakov actually invited to Russia the Petty brothers who were well-known physical mediums of the time and also an English clairvoyant, but none of these three persons impressed Mendeleiev. In his opinion, he did not regret the time spent on the matter, but concluded that these practices made people lose a sensible point of view, spread mystical ideas and re-inforced superstition. For further information about the results of this commission and the various replies and protests that the conclusions of the committee evoked, see *Psychische Studien*,

report of its activities, in spite of the great name of its founder, Dmitri I. Mendeleiev (1834-1907) did not reach the shores of the Thames. In fact, the impulse to this event was given by Home's séance in St. Petersburg in 1871, organized especially for professors and university authorities. Although this particular séance gave negative results, Professor Mendeleiev then organized the said commission to investigate paranormal phenomena.

The above fact deserves special attention for two reasons ; on one hand, it demonstrated that Mendeleiev, a truly great scientist whose contribution to chemistry is of outstanding importance[1] always showed an objective interest even in the most baffling phenomena ; on the other hand it emphasizes what was a predominant tendency among the Russian educated classes, namely a tendency towards scientific investigation rather than philosophical theorizing. This tendency becomes more evident as we progress in our study and without indulging in speculations irrelevant to the subject we may consider it as a reaction against the superstitious illiteracy of the vast Russian masses and against the blind faith in some village seer, be he a *starets* or *shaman*.

At any rate, in the late 1870s we observe in Russia a general awakening of interest in paranormal phenomena and it is not a coincidence that *Rebus*, the first Russian periodical devoted mainly to such problems, made its appearance also about this time.

Rebus, unlike its much earlier British predecessor *The Zoist* (1843-1856), had a general character ; it published news items concerning medicine (homeopathic medicine in particular), meteorology and other branches of science, as well as novels and short stories with occult subjects ; biographical fragments relating strange events in the lives of famous people and translations of British and French works and articles on psychical research. Its main purpose, however, was spreading knowledge of paranormal happenings and its editorial policy was expressed in the following sentence : " The facts are before us, we should approach them with a liberal, open-minded attitude. A strict positivism is but another form of prejudice " (*Rebus*, 1881, p. 172).

The facts most frequently reported by *Rebus* in the first decade

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1876, III, pp. 241-244 (replies by Aksakov and Butlerov) : *Ib.* 1876, pp. 287-293 (N.P. Wagner's reply), followed by an account of the public protests, etc., pp. 293-296 ; 385-399 : C. Kiesewetter, *Geschichte des neueren Occultismus*, Leipzig, 1891, p. 632 : P. Kolodkine, *Mendeléïev*, Paris, 1963, pp. 89-92.

[1] Mendeleiev received both the Davy and Copley medals from the Royal Society.

of its existence were private and public séances held all over Russia by magnetizers and by healers who used animal magnetism for this purpose. The internationally famous Dane, Carl Hansen (1833-1897) belonged already to the past, but in his wake we find Bukser (*Rebus*, 1887, No. 39, p. 376) Grigorovich (*Rebus*, 1888, Nos. 35, 39, pp. 315, 353), Ziefeld (*Rebus*, 1885, No. 45, pp. 400-401) and the two most important figures in this field, P. Roberts and O. J. Feldman. During the years 1881 to 1883 *Rebus* devoted over ten articles to the magnetizer Roberts and his experiments with his somnambules in the various Russian cities and we shall return to him later.

It was Feldman, however, who dominated the scene and his activities deserve a more detailed description, the more so as he seemed to possess a truly enquiring mind, always eager for new experiments and never shy of scientific scrutiny. Feldman had at first earned a great reputation by his many cures performed under hypnosis ; unlike Roberts, he considered hypnotism a better means of treatment than animal magnetism, although he was known as " magnetizer Feldman " and their methods were often similar. From his activities in this field we shall quote only a few of the more spectacular instances as, for example, a cure of insanity with persecution mania in which he used the method introduced later by Freud of the patient's re-living the traumatic experience (*Rebus*, 1885, No. 50, p. 454) ; a cure of severe epilepsy, in which case he used successfully the method of inducing hypnosis from ordinary sleep when the patient seemed otherwise impossible to hypnotize and finally a successful treatment of a woman with chronic organic illness who had already undergone several operations only to become a total invalid until Feldman brought her back to health. Most of Feldman's treatments were carried out under medical supervision, some as scientific experiments and the last one was considered surprising enough to be described in the serious medical journal *Vrach* [The Doctor] in August 1892.

From our point of view particular significance is attached not to Feldman's therapeutic but to his scientific experiments, several reports of which are given below. These experiments were as a rule witnessed and attested by physicians, university professors or other scientific observers and can probably be regarded as trustworthy. As will be observed, they often constitute landmarks for future researchers into hypnosis and its possibilities.

From the beginning Feldman's interest was directed to the problem of the extent to which the natural faculties of a person could be increased or modified by hypnosis ; and the following

instances are supposed to supply some answers to this question. In the first experiment a subject was ordered to solve under hypnosis a geometrical problem, well above his normal ability. The order was carried out, and in precisely the specified time. In another experiment Feldman read to the subject (under hypnosis) several strophes from the *Iliad* (in Greek hexameter) ; the subject repeated them afterwards without a single mistake in words or metre although not knowing Greek. Then half a page was read from a French book. The subject repeated it without mistake. In a third experiment Feldman gave to his subject a difficult trigonometric problem which the latter tried to solve for several hours without success. Under hypnosis he solved it with remarkable ease, using a different formula, tackling logarithms without hesitation, etc. After waking up he was again unable to solve the same problem (*Rebus*, 1885, No. 41, pp. 370-371).

Feldman observed that along with the increase of such faculties as memory and mathematical ability his subjects experienced peculiar changes of eyesight. Thus, for example, a certain Mr. T., normally near-sighted, in hypnosis would become exceedingly far-sighted. Colour vision could be equally affected, as Feldman proved during his séance with Dr. Gurovich in Rostov, when experimenting with a medical student, Mr. K. " I order him not to see green, when he wakes up," reports Feldman. " Indeed, to his great astonishment Mr. K. sees everything in red. Then, without his knowledge, I apply a small magnet to his nape ; Mr. K. is amazed : all objects look suddenly green. As soon as the magnet is removed, he sees all in red again. This hallucination lasted (as previously determined) a full half hour, while the subject was entirely conscious " (*Rebus*, 1885, No. 42).

Using another subject, Mrs. L., Feldman orders her under hypnosis and while her left eye was covered, not to see the colour blue. After opening her left eye she is astounded to see orange with her right eye and blue with the left. At the moment the magnet is applied, the situation changes : her right eye sees blue, and left, orange. With the removal of the magnet the hallucination ceases.

Similar experiments were carried out in the area of emotions : under the influence of the magnet the subject's hallucination changed into the opposite, i.e. anger changed into a feeling of pleasure, laughter into crying (*Rebus*, 1885, No. 43).

Feldman experimented also with subjects capable of clairvoyance ; a séance of that type which took place in the St. Petersburg Medical Society was reported by *Rebus* (1889, No. 8, p. 79)

Feldman's subject was a certain Mr. E., whom the magnetizer had recently cured of a serious nervous illness. After some preliminary experimenting, such as bringing Mr. E. into a state of catalepsy, producing muscular contraction, illusory sensations, etc., Feldman was asked to produce instances of clairvoyance. For this experiment it was agreed that the subject should follow Mr. Mikeshin (of the Academy of Science) and answer his questions.

They then started on an imaginary trip to Mr. M.'s apartment, M. telling the subject to ask the name of the servant. " I don't feel it's the right thing to do," said E. " Never mind, do it." " She says she's called Dunia," said the subject. This was correct. They then entered the hall and there was an old helmet above the door. " What's in it ? " asks M. " Some old bones," answers E. Indeed, there was a skull inside the helmet. " What do you see in the next room ? " " An oval table." " What is on the table ? " " A pitcher, three candlesticks, an ashtray." M. did not know himself what objects were placed on the table, as his wife was supposed to do this for the experiment. As it turned out, E.'s answers were not quite correct, the pitcher and the ashtray were not there, but there was another object similar to a candlestick.

The protocol of this séance was signed by the ten physicians and scientists who took part in it.

It might be suggested in parenthesis that this last experiment demonstrated the faculty of thought-reading rather than of clairvoyance in Feldman's subject ; his answers were right in so far as he followed M.'s knowledge, then faltered. Feldman, however, also experimented with thought-reading (thought-transference), of which more will be said later. The picture of his activities would not be complete if we did not mention in passing his other contributions to the field of hypnotism, contributions of both new and lasting ideas. He advocated, for instance, using hypnotism and hypnotic suggestion in the treatment not only of illnesses, but also of character, and expressed his viewpoint in an article " Novoe primenenie gipnotischeskovo vnushenia " [New application of hypnotic suggestion] (*Rebus*, 1896, No. 51, pp. 443-444) illustrating his opinions, from his own practice, by examples of actual, striking and permanent improvements in behaviour as a result of hypnotic suggestion. The cases of a merchant from Tiflis, aged 39, and of a " young delinquent " from a respectable family (to use a contemporary term) seem most convincing. Encouraged by his successes, Feldman came to the conclusion that hypnotism could be successfully used to treat what he called " illness of the will " particularly alcoholism and drug

addiction (*Rebus*, 1897, No. 37, pp. 312-314). In such manner he is a predecessor of Bekhterev, whose work will be dealt with later, as well as of many psychotherapists in the Soviet Russia of today.

The Controversy over Thought-Transference

Again with a great delay, but nevertheless with great impact, the popular interest in thought-reading and thought-transference reached Russia and spread there like fire over dry bush. But what Thompson, Ashburner and others discussed in England in the 1840s became table-talk of the educated Russians in St. Petersburg or Moscow only in the mid-eighties. And, once more, this was partly due to the séances conducted several years before all over Russia by the magnetizer Hansen, who had stirred not only public opinion, but serious scientific circles as well, to a degree never observed before.

After Hansen there came the séances of Bishop, Roberts and Feldman and the result was that during the ninth decade of the last century there was hardly a self-respecting family in St. Petersburg who did not conduct experiments in thought-transference, whether in a very amateurish manner indeed or, perhaps, with a certain attempt at being scientific, or even under the full control and in the presence of a reputable observer.

As elsewhere, so in Russia the phenomenon of thought-transference was bound to provoke a controversy, even a double controversy one might say, which at first did not exist since it was simply taken for granted that mesmeric or magnetic sleep, producing clairvoyance, was also responsible for the somnambule's ability to read people's thoughts. As the scientific approach prevailed upon the popular one, the question inevitably arose as to whether what was then called thought-reading was due to clairvoyance or to some wider faculty, namely telepathy, capable not only of reading thoughts present in the mind of another, but obtaining information from the same mind concerning thoughts or events which had been forgotten.

Later on even the hypothesis of telepathy was rejected as too far-fetched by certain research workers who, following Cumberland, attributed all phenomena of thought-transference to minute muscular movements, and it was only in this latter stage that the problem was discussed in Russia. It will be remembered that Stuart Cumberland, whose real name was Charles Garner, specialized in the kind of performances which previously had been made famous by Washington Irving Bishop, who died in 1889, which was the year when Stuart Cumberland himself ceased his performances.

Both Bishop and Cumberland had been to Russia and some of the experiences of the latter were described in his book *That Other World* (London, 1918, pp. 22 ff.).

Since the arguments and experiments of those supporting Cumberland are described at length elsewhere, we shall limit ourselves here to quoting mainly those Russian scientists who belonged to the other camp, first of all A. M. Butlerov (1828-1886), Professor of Chemistry at the University of St. Petersburg and member of the Russian Academy of Science.

In an article entitled " Chtenie Mysley " [Thought-Reading] published in *Rebus*, 1884, No. 47, pp. 433-435, Professor Butlerov gave his opinion on the subject in the following terms. Not so long ago, he wrote, a surprising change of opinion was witnessed in scientific circles towards the phenomena of hypnotism. Under this new name and under the leadership of the famous Charcot, scientists have accepted, at any rate in part, the old, well-known phenomena of mesmerism and yet not so long ago mesmerism was persecuted, being considered as a product of charlatans and superstition. In the area of mesmerism, thought-transference had been accepted for many years as fact, together with the transfer of the will and clairvoyance, but all these phenomena were put on one side. Now again, Butlerov continued, scientists were being confronted with the same facts in connection with hypnotism. Butlerov then went on to say that the phenomena had to be accepted, because, as he put it, with the facts there was no quarrel. Why, he asked, should there not be thought-transference when it was known that suggestion at a distance existed, no less than the action of a magnet at a distance or radiation over immense distances ? He proceeded to point out that in his opinion certain experiments with Bishop proved that thought-reading could not be explained by methods attributed to Stuart Cumberland. Giving an example, he told how Mr. Makovski had thought of the figure 1395666 and how Bishop wrote it on the blackboard only 40 seconds after he had touched Makovski's hand ; and again, how Bishop guessed the person of whom someone in the audience had been thinking. In these cases, Butlerov stated, an explanation of muscle reading did not apply.[1]

[1] The literature on Washington Irving Bishop is very extensive. His own views were made known in his *Second Sight Explained* (Edinburgh and Glasgow, 1880). Although this book was an exposition of the art of second sight as exhibited by Robert-Houdin and Robert Heller, there is no reason to suppose that much of it did not deal with his own experiences. It is interesting to observe that Butlerov apparently completely failed to realize that many of Bishop's effects were due not only to his power of muscle reading, but to his remarkable powers of showmanship.

As might have been expected, and what indeed was unavoidable, the great popular appeal of the problem of thought-transference found its expression in *Rebus*, and its editor-in-chief, V. Prybytkov, wrote a series of articles, one of which, entitled " Domoroshenniy skeptisism " [Domestic Scepticism] (*Rebus*, 1884, No. 48, pp. 443 ff.) is most characteristic of them. In this article he attacked the opinions of Mr. Elpe, who belonged to that group of persons who did not believe in the paranormal explanation of thought-reading, but maintained that the effects were due to muscle reading, either voluntary or involuntary. How, he asked, would persons agreeing with Mr. Elpe regard all those people who performed similar thought-reading experiments successfully, and in particular the family of a certain Mr. Greshner whose tests were conducted in the presence of Dr. Bystrov and Dr. Kobylin. Prybytkov went on to say that he personally had been present at some of their séances and he proceeded to give the readers of *Rebus* some idea of the methods used by the Greshners.

The conditions of each experiment of thought-reading, he stated, were (1) that a third person should serve as a link between the agent and percipient ; (2) that a metal conductor (a gold chain) be used, so that the hands of the percipient and agent were not in contact ; (3) that the percipient's eyes be covered.

The orders were given mentally by the agent and were as follows :

1. To take from the table a sheet of paper, cut it in four and give the pieces to specific persons.
2. To take one of many fur caps and put it on the foot of one of the observers.
3. To take from a box some playing cards which had been mentally chosen by the agent and then give them to specific persons.

These experiments were all successful and thus the participants felt authorized to declare, as a result, they believed to have proved conclusively that the theory of muscle reading did not play any part in the results obtained by them.

As a sequel to the above experiments, Prybytkov organized a series of similar tests in the office of *Rebus*, which were placed under the supervision of Professor Butlerov and some other well-known students of the subject. They were described in *Rebus* (1885, Nos. 6 and 8, pp. 55-57 and 75-76) and were considered as giving conclusive evidence of thought-transference.

Another worker whose name is constantly in evidence in the debate on the authenticity of thought-transference was Professor Nikolai P. Wagner (d. 1907), who gave numerous public lectures on the subject and whose views were summarized in an article " O chtenii mysley " [On thought-reading] in *Rebus* (1884, No. 49, pp. 453-455), from which we quote those portions which seem to be of some significance. The article opens by Professor Wagner reporting some of his own recent experiments and asserting that similar tests had been conducted by the Society for Psychical Research in London and had given similar results.[1]

In his paper Wagner stated that the various experiments in thought-transference led to the conclusion that guessing another person's thoughts might take place without any direct material contact between the subject and the experimenter. He went on to say that opponents suggested other possible explanations, such as that muscular vibrations were transmitted by the floor, a suggestion which led him to ask why they did not simply maintain that such vibrations were conveyed by the air. If the neuro-muscular currents carrying thoughts could be conducted by a wooden floor, he submitted, then the particles of air could do it equally well and once the theory of light as vibrations of the ether was accepted, then a similar theory for the transfer of thoughts could be considered.

In Wagner's opinion, these phenomena, based as they were on facts, belonged to the realm of what he called " psychological hypnotism " and he found it necessary to repeat in these articles something about his own opinions on hypnotism. In hypnotic phenomena, he wrote, the subject, owing to fatigue of attention or to an artificially produced tendency to sleep, fell into the hypnotic state *under the influence* of the hypnotizer's will. The power to exercise his own will was removed and the will of the hypnotizer directed the whole of his neuro-muscular mechanism as if he were an automaton. Wagner stated that he had himself succeeded in proving experimentally that hypnotic passes did not play such an important role

[1] The most important of the experiments in thought-transference carried out by the British Society for Psychical Research a year before Professor Wagner wrote were those connected with the investigation of Mr. Douglas Blackburn and Mr. Albert G. Smith. It has only recently been shown in what, I think, must be considered a very convincing manner, that both Blackburn and Smith were using normal methods of communication, such as codes, and that there was nothing paranormal in their work. For a full account of these experiments and a detailed discussion of their value see Trevor H. Hall's *The Strange Case of Edmund Gurney* (London, 1964). [*Ed.*]

as Heidenhain and other physiologists believed. What played the main role was the will of the hypnotizer.

Continuing his theme, Wagner stated that such was the situation with what was called ordinary hypnosis. His *psychological hypnosis* offered an entirely different picture. Here, the hypnotizer acted on the will of the subject but did not put him to sleep, so that the subject became able to enter into communication with the minds of both the hypnotizer and other people and was able to read more or less easily their thoughts.

In certain forms of hypnotic sleep envisaged by Wagner, the subject, he stated, might be in a cataleptic state or the sleep might be so light that the subject could control his body, but at the same time acquire the faculty of penetrating to a certain degree the minds of others. He considered that thought-transference took place mainly in this light hypnotic state, the abnormality of which was shown by certain deviations of the neuro-muscular system, such as irregular breathing. Wagner suggested that the phenomena of thought-transmission in this state represented the first weak degree of what was usually called clairvoyance, a phenomenon not yet accepted by scientific circles of physiologists and psychologists, although he himself had no doubt whatever about it. He went on to say that during the spring and summer of 1883 he had conducted a series of experiments with this form of hypnosis and with various degrees of clairvoyance. It appeared to be necessary that the eyes of the subject should be covered during such experiments in order that the physiological function of sight be suspended and thus would not interfere with the other type of vision.[1]

Rebus, having stated as its editorial policy that it would discuss all theories and publish various opinions, did not refuse space in its columns to opponents of these ideas, whose members were far more numerous and included among others such well-known scientific men as Professor J. A. Sikorski and Professor I. R. Tarkhanov (7). One of them, however, P. A. Spiro, Professor of Physiology at the University of Novorosiysk, a writer and a lecturer, made an unexpected recantation of his views and at a public meeting in Moscow on 7 January 1885 admitted that formerly he had been in error. Stating that there were, in his opinion, two methods of mind-reading, he explained that the first, based on muscular contraction, he called physiological, while the second took place in the hypnotic state, either quite a light condition induced by a hypnotist or even self-induced by the subject himself. In this case, when the eyes were

[1] Cf. Dr. Khovrin's observations below.

covered and muscular contact could not occur, then he considered that genuine thought-reading could be assumed (*Rebus*, 1885, No. 3, p. 24).

It will be seen from the above account that the controversy over the problem of thought-transference was occupying a good deal of scientific and popular attention at this time and it is of considerable interest to note that at the last session of the Society for National Health on 9 January 1885, Professor Andreyevski announced a growing concern among several members of the Society about the fact that the experiments on thought-reading were widely spread and might not be quite harmless. Consequently the Society decided to begin a systematic, scientific investigation of these phenomena, connected as some of them were with Cumberland, Bishop and others. The members appointed to the commission were Professors Borodin, Dobroslavin, Egorov, Sikorski, Slavinski and Sushchinski. They were supposed to hold frequent meetings and report their findings to the Society (*Rebus*, 1885, No. 3).

Alleged Paranormal Phenomena with Somnambules as reported by the Weekly Paper, *Rebus*

As has been mentioned before, *Rebus* devoted some of its space to reporting cases of a more or less paranormal character, and it may be observed that some of these reports seem in general to be well attested and in certain cases signed by eye-witnesses. We propose including here a selection of such cases covering a wide range of phenomena, but all to some extent connected with mesmerism. Slightly abridged, the cases are arranged chronologically and the first, which appears to be concerned with clairvoyance in the magnetic state, was extracted by *Rebus* (1896, No. 3, p. 280) from the reminiscences by Vladimir V. Stasov concerning the life of his sister.[1]

At the end of the 1840s, Stasov's sister had a fiancé who had left her shortly before the wedding and had married another woman. This was such a shock for his sister that she became mentally deranged. The whole family fell into a state of deep depression ; it seemed as if nothing would cure her until one physician decided to try magnetism and then they were able to observe the most incredible events. The patient was put to sleep by magnetic passes, or by having a magnetized ring placed on her finger. In this condition

[1] Nadezhda Vasileva Stasova was a famous Russian woman who devoted her life to promoting women's education.

she dictated to the physician what treatment she needed, giving him the name of a specific medicine in its Latin form, of which she had no normal knowledge. But the most astonishing thing was that, while in the magnetic sleep, she should suddenly exclaim "*He* is passing by". They ran to the balcony and saw that in fact her former fiancé was just driving by in his carriage. A similar occurrence took place after the family had moved to Pargolov, a resort north of St. Petersburg, where her treatment was continued. One day, while in the magnetic state, she declared that he was in the park and, indeed, when their aunt came to visit them that evening she said that she had actually met the man with his wife in the park. A few months later Stasov's sister recovered and became quite normal.

In *Rebus* (1885, No. 45, pp. 400-401) a case is reported originally published in the *Odesskiy Listok*, No. 232, and describing a séance organized on 14 October 1885 at the house of a Mr. B. to which a magnetizer of the name of Ziefeld had brought his subject, a young man of 22 called Eugène. The performance consisted in Eugène being magnetized and then answering questions put by people in the audience, the phenomena apparently demonstrating travelling clairvoyance and similar alleged faculties. *Rebus* describes the session as follows :

" Col. S. takes a key from his pocket and gives it to the magnetizer with a request that the subject should tell what is in the right drawer of his desk, which the key can open. The magnetizer gives the key to Eugène, saying, 'Take the key and find out what is in the right drawer of this gentleman's desk, at No. . . . Street. . . .'

E. takes the key, makes a vague movement and says, as if to himself, 'How can I go into somebody's house ? They'll catch me. . . . Better not.' He seems agitated. The magnetizer calms him and repeats the order. The sleeping man finally agrees. Then he begins to make movements with the key as if he were trying to put it in the lock, looking back constantly as if afraid of being watched. The first object he seems to notice on the desk is an album with Chinese drawings ; he makes movements as if turning pages and obviously enjoys looking at the pictures until the magnetizer tells him to put the album down and see what else there is on the table.

'Why not smoke a cigarette ?' murmurs Eugène and reaches with his hand to the box of cigarettes on Col. S.'s desk. Putting in his mouth an imaginary cigarette and making movements as if he was lighting it, he seems to inhale with obvious relish.

'What are those cigarettes ?' asks the magnetizer.

Eugène immediately 'takes' the cigarette out of his mouth, holds it

before his eyes as if to read and says, ' Lamba ' ; then starts smoking again.

' What is in the drawer ? ' asks the magnetizer.

' Money,' says Eugène and exclaims, ' Don't take money,' as if afraid it may tempt him.

' Leave the money and look further down in the drawer ; what is there ? '

' A photograph,' says the subject.

' Whose ? ' ' A woman's.' ' What sort of a photograph ? ' Eugène makes a movement as if turning the picture over and reads, ' Tchekhovskavo '. ' What else is there on the desk ? ' ' Some sort of a box.' ' See what is inside.' Eugène is silent for a moment as if looking at the object in the box, then seems to move it between his fingers. ' Evidently it is for her,' he says, pointing at the photograph.

' But what is it ? ' From Eugène's description one could guess it was a necklace of some precious stones. According to Col. S. all the objects mentioned by Eugène were on or in his desk and indeed could be seen there later by other members of the audience.

Afterwards Eugène performed some more experiments for other people ; he answered with difficulty and unwillingly, but always correctly.

The above is a strictly correct report of an eye-witness.

Signed by the editor."

The next case (*Rebus*, 1887, No. 11, p. 129) was apparently sent from Samara, which is on the left bank of the Volga in the south-east of the country, on 20 February 1887 and described incidents relating to a lady who from the details given may have been in an auto-hypnotic condition.

" Miss B., a daughter of a railway employé, aged 18, a handsome and healthy girl with pink cheeks, cheerful and high-spirited, is subject to a strange condition which the local doctors diagnose as a general disturbance of the nervous system and are unable to cure.

The symptoms are as follows. A day or two before the ' attack ' Miss B. becomes depressed, has a migraine, becomes sleepy, upset, has fainting spells, then fainting turns into a fully cataleptic state. Her heart-beat is very weak, her eyes are closed and one cannot hear her breathing.

This lethargic state lasts for up to two days and while her body is motionless, her right hand makes movements as if looking for something. This lasts until she is given a pencil and a piece of paper which she places on a book that is handed to her. (She rejects other objects.) Then she starts writing in large characters quite unlike her own.

She writes answers to questions about the situation in the family, advice to people who come to see her and occasionally information on some future event. When her father came back after looking for a job out of the town she wrote, 'You don't need to look for a job, you won't find anything around

here, but next summer you'll get a good place in a large city on the Volga'. This happened, for he got a job in Samara.

After waking up, Miss B. does not remember anything. The notebooks with her writing are not shown to her."

In a further number of *Rebus* (1887, No. 36, p. 350) a case of double personality in the hypnotic state is reported by Mr. N. A. Lysenko from Rostov-on-Don.

" Miss Evdokia N., aged 20 years, strongly built and healthy, came with her mother to Dr. Dubrov complaining of peculiar attacks : she becomes unconscious, struggles for a few minutes, then recovers herself and falls asleep. These attacks started years before but recently began to occur more frequently, sometimes twice a month. The doctors who had treated her so far attributed it to hysteria or epilepsy but were unable to help her.

Dr. Dubrov decided to try mental suggestion. She fell asleep easily, but her answers did not explain anything. She was told to stop the attacks. During the third séance, after Dr. Dubrov hypnotized her, she fell into a cataleptic state, but at first she did not answer his questions. Then Dr. Dubrov remembered an article he had read by Janet and asked her, ' How many are you ? '

She answered, ' Two '.

' All right, you're Evdokia, we'll call the other Masha.'

She gives negative signs with her head, no, no. ' Then what is she called ? ' ' Katia.' ' Who is sick ? ' ' Katia.' When asked about the attacks, ' Katia ' said there would be one the next Thursday at 8 p.m., another on the following Thursday at 7 p.m. and the last a week later on Friday at 8 p.m.

' How many times should Evdokia be hypnotized ? '

' Ten times.'

At the following sittings she gave the same answers, with the numbers of the séances correspondingly less. Each time the ' Katia ' personality was ordered to leave. When asked if the next attack could be stopped, she said ' Yes, but I'll develop a temperature '. The doctor told her not to have the attack on the following Thursday. Indeed, when she came on Thursday she was feverish, but had had no attack. At 9 p.m. she was under hypnosis and the questions were addressed separately to both personalities.

' Evdokia, I'm talking to you, Katia should be quiet. When will the next fit be ? ' ' I don't know.' ' How many more times should you come ? ' ' I don't know.' ' Evdokia, be quiet. Katia, answer. Who is sick ? ' ' Katia.' ' From what ? ' ' From fear.' ' What fear ? ' ' They took me away from home.' ' When ? ' ' Six years ago.'

Afterwards Evdokia's mother confirmed the fact that her daughter was taken away from home precisely at that time.

Starting from the fifth séance there was a marked difference in the voices

of the two personalities : Evdokia spoke with her usual voice while Katia whispered ; as before, Katia seemed to know all the answers, Evdokia none. Her mother reported that she had become irritable recently, even at times violent, throwing objects, breaking dishes, etc.

Next week she had an unexpected attack. When asked under hypnosis why, she said, ' I don't know.'

' Katia, why did Evdokia have a fit ? '

' I wanted to play.'

The mother mentioned that before the attack Evdokia dreamed about a child who caressed her. Then Katia was asked how she showed herself to Evdokia. ' As a child,' she answered.

' When will you leave Evdokia ? ' ' On Sunday at 2 p.m.' ' Will you come again ? ' ' Maybe.' ' Can you show yourself ? ' ' No, it's impossible, no one can see me.' ' Evdokia, what is my surname ? ' ' I don't know.' ' Katia, my surname ? ' She gave the right answer. ' Katia, do you like me ? ' ' No.' ' Why ? ' ' You chase me away.' ' Evdokia, how do you feel about me ? ' ' I am very fond of you.'

During the next séance the difference between the two is still more pronounced. Katia whispers, but very sharply and angrily, while Evdokia is quiet. ' Should Evdokia come here again ? ' asks the doctor.

' To hell with her, she can or not.' ' Why are you so angry ? ' ' You chase me away.' At the last séance, on Sunday at 7 p.m., when asked under hypnosis, ' How many are you ? ' she answered, ' One'. ' And where is Katia ? ' ' What Katia ? There is no Katia.'

From then on Evdokia had no more attacks and felt quite well. Once she fell in the factory where she was working and hurt herself slightly, but it is impossible to know the reason."

Mr. N. A. Lysenko signed the report as having been present during all the séances and having found the case of divided personality very rare and most interesting. The authenticity of the case was attested by Dr. R. Dubrov, C. A. Grigov and others who attended the séances.

The following case entitled " Poslushnost mediumicheskikh yavleniy voli gipnotizera " [Obedience of mediumistic phenomena to the will of the hypnotizer] which was reported in *Rebus* (1890, No. 45, p. 400) is mentioned here because of its unusual nature. It refers to a sitting which took place in Chernikhov in the apartment of Mr. A. S. Zigmont who, with the wife of Dr. K. P. Ulezko and other persons met on 24 October 1890. Mr. Zigmont, who furnished the account, noted that Feldman was not a Spiritualist but on that occasion when he was present the phenomena were quite different from those which the circle had previously experienced. Zigmont wrote that as soon as the circle was closed and everybody was seated at the long, rather heavy four-legged table Feldman ordered

loudly that when he had finished counting to ten the table should rise into the air with all four legs. Those present were amazed when Feldman's order was fulfilled immediately. This was repeated time and again : different objects moved from place to place according to his command. When he said the bell was to ring, it at once rose into the air and started ringing. In one word, whatever force was in action during the séance it was subject to Feldman's authority. In conclusion Zigmont asked whether the results of this sitting would not support Hartmann's theory of the dependence of mediumistic phenomena on the unconscious wishes of the sitters.

This sitting was clearly of exceptional interest, but unfortunately we do not possess sufficient detail to enable us to come to any conclusions on the matter. Feldman was primarily a magnetizer, but here it would seem that he was acting as a medium for telekinetic phenomena. On the other hand, it might be suggested that the alleged phenomena were hallucinatory and had been produced by Feldman as an experiment. Knowing what we do about hypnotism, this would appear very unlikely unless it be assumed that all those present had been previously hypnotized by Feldman and a post-hypnotic hallucination suggested to them.

The next report, published in *Rebus* (1893, No. 2, p. 21), would also be of considerable interest if we did not know something about the author, Constantin A. Bodisco. He was Court Chamberlain to Alexander III and was notable for his credulity. In his book *Recherches Psychiques* (1888-1892) which was published in Paris in 1892 and dedicated " aux incrédules et aux égoïstes " the summary at the end of the volume (pp. 107 ff.) concerns his views and experiments on the astral body.

In his paper, which is entitled " Astralnoe Telo " [The Astral Body], he states that the experiment took place at 2 p.m. on 5 August 1892 in Tsarskoe Selo in the presence of trustworthy witnesses. Five persons were present : two of them were deeply hypnotized and shortly afterwards a spot of light appeared near the right hand of one of the subjects. This became gradually wider and brighter and seemed to be an extension from his hand. It took a pencil from the table and wrote, " This is an astral body ". After making a few experiments, the subjects were awakened. After drinking some tea, they repeated the experiment ; one of the subjects was again deeply hypnotized and the astral matter around him again became visible, so that the whole room was illuminated, although a lamp was already burning there.

The above case appeared too incredible even for some of the

readers of *Rebus*, who considered it unfit to be reported in a serious journal. Nevertheless, the author insisted on its authenticity which could be apparently attested by persons present.

Among the French mesmerizers who were particularly interested in the effect of animal magnetism on plants and vegetables was J. J. A. Ricard, who in his book *Traité théorique et pratique du magnétisme animal* (Paris, 1841, p. 334) stated that both harmful and salutary effects could be experienced by plants. He said, however, that he had found some difficulty with these although he was quite successful with trees. In 1899 there appeared in the *Journal du Magnétisme* (20 janvier 1899, pp. 25-28) a paper by L. Gravier on the effects of magnetism on plants. This was reprinted by *Rebus* (1899, No. 8) and there followed an account (1899, No. 45, p. 390) by a lady of the name of Averkev of some experiments on magnetizing sweet peas. She stated that her results indicated a distinct difference in the development of magnetized as opposed to non-magnetized plants. Her method was to apply daily passes of fifteen minutes at a time. The magnetized peas grew faster and came into bloom on 23 June, while the unmagnetized plants only bloomed on 8 July. Indeed, the development of the plants under the influence of magnetism was strikingly better than that of those which had not been treated.

In this account of the effect of magnetism on sweet peas, we have again insufficient detail to enable us to come to any conclusions. As in nearly all these early experiments, both in Russia and elsewhere, the operators show that they know little of how scientific experiments should be conducted and omit even the most elementary details of their experiments.

Dr. A. N. Khovrin and the Tambov Experiments

In 1898 there appeared some material in a Russian medical journal (8, pp. 247-291, 441-475) by Dr. A. N. Khovrin, the superintendent of the Hospital for Mental Diseases in Tambov, a city with a population of about 50,000 and situated between Moscow and Saratov, some 300 miles south-east of Moscow. By publishing this article, Khovrin drew the attention of Russian medical researchers to certain very unusual phenomena and by accepting his article for publication, the journal in question showed that in its opinion the case history presented was of scientific interest.

The patient concerned had been under close and constant observation for several years and the experiments had been repeated

not by one person but by several experimenters and even by unofficial commissions. Neither publicity nor commercial factors had been present. As the case is one of very great interest, we are here summarizing Khovrin's report in such a way that it is hoped a fair picture of the whole case is laid before the reader.

Owing to the unusual nature of the phenomena presented and their close relation to clairvoyance as reported in magnetic subjects, *Rebus* (1898, No. 35, pp. 301 ff.) published its own report entitled "Tambovskaya Yasnovidshchaya" [The Clairvoyant from Tambov], in which the possible paranormal aspect of the case was stressed, as opposed to Khovrin's own view that it was an unusual case of hyperaesthesia of the senses.

The patient whose case was discussed by Khovrin was a lady called Miss M., in her early thirties, a teacher by profession and belonging to a family with a pronounced history of psycho-nervous disorders. As a small child she was very sickly and very impressionable from the earliest stage of her development. As a little girl of 6 to 7 she exhibited definite cycles of high or low moods as well as a certain eccentricity which, however, did not affect her character which was both kind and good natured. In spite of Miss M.'s generally poor health her physical and mental development was not arrested and she received regular education at what corresponded to a secondary school for girls. Between the ages of 14 to 17 her general nervousness increased, acquiring hysterical aspects such as irregular heart-beat, sudden attacks of weakness and neuralgia. These symptoms noticeably increased every spring, so that she used to spend a good deal of time in the infirmary. Autumn and winter, however, affected her favourably, so that she was able successfully to follow her school curriculum. In spite of her frequent illnesses, she made good progress and was one of the best of the students. In particular, she did not need to memorize anything : when answering a question she was able to see, as it were, a whole page of the book before her. On the other hand, subjects requiring abstract thinking gave her much trouble. These characteristics remained with Miss M. until the time that she passed under the care of Khovrin.

Her first hysterical epileptic fit occurred when she was 17 ; after that there was no further attack for a considerable time. Notwithstanding her many handicaps, Miss M. became an energetic and professionally efficient young woman, opening a small boarding-school for girls, and during the next seven years carrying on this activity with financial success, although the spring always affected

her so badly that she had to leave her work to the assistants whom she engaged for the purpose. In her 26th year, her illness took a serious turn for the worse. She had developed violent hysterical epileptic attacks as an after effect of having taken part in a séance for thought-reading on 26 August 1887. The experiments during this séance had included putting one person into the magnetic sleep. Two other persons then became hysterical and this affected Miss M. so badly that she fell into a fit and from that day the fits became recurrent. She was obliged to close her school and begin treatment for her condition, but it was not successful.

In order to complete the picture of Miss M.'s personality it should be mentioned that her mother, whom she resembled, suffered from occasional hysterical attacks and that her father was an alcoholic. Moreover, an elder brother was also of a sickly disposition and occasionally had attacks, while his daughter, Miss M.'s niece, suffered from slight hysteria. Her second brother was entirely normal and healthy, but among her three sisters hysterical attacks and acute nervousness were present, while some of their children were neurasthenic. These characteristics of Miss M.'s family extended to her grandparents, especially in the female line. In appearance she did not show any effects of her illness : she was a handsome, well-built and tall individual, conforming to the family pattern, which, in short, was a good physical development and a nervous hysterical disposition.

Four distinct phases may be distinguished in Miss M.'s illness.

1. From early childhood until 14 years, there was nervousness and slight hysterical features such as are prevalent among small girls of that age.
2. From 14 to 26 years, occasional hysterical attacks with the usual symptoms.
3. From 26 to 34 years, hysteria major or hysteroepilepsy.
4. From 34 years onwards (a period under Khovrin's own observation) the symptoms decreased.

One of the symptoms that attracted Khovrin's attention from the very beginning was the striking diversity of Miss M.'s sensitivity. He noticed that during the attacks it was only her left side that was in a state of anaesthesia, a state that affected not only her skin but also the sense organs of sight, smell, hearing and taste. It was also on this left side that she occasionally suffered from neuralgia. Her right side, on the contrary, and as if in a sense to compensate for the loss of feeling in the left side, showed increased sensitivity, both

cutaneous and sensory. The duration of both states was identical. On her left side, thermal sensitivity was reversed. Warmth appeared as cold and vice versa, and this regardless of the general anaesthesia of the whole side. In her normal condition, Miss M. could discern colours easily enough, except for blue and green which she had always confused. During her attacks her colour-blindness became increased ; she was then only able to discern dark from light, but at the same time was able to see light-coloured circles in the visual field. Similar irregularities occurred with other senses. When, for instance, her left tonsil was touched, there was no effect, but when contact was made with the right one, her reaction was very marked.

Her illness showed much fluctuation from day to day, strongly affecting her moods ; one factor, however, remained stable and constant, namely her tenacious will to recover and to return to her normal existence. Owing to this basic attitude, Miss M.'s illness did not produce any marked changes in her personality, which was distinguished by an even, quiet disposition, logical methods of thought, well-developed powers of self-observation and a rational attitude towards her environment ; in other words, apart from her attacks, she would seem to be an altogether normal person.

Passing from one state to another was extremely sudden : it almost looked as if she were awaking from a period of sleep. These sudden changes, according to Khovrin, could probably be ascribed to two factors ; firstly, a congenital and abnormally high receptivity of the nervous system, and secondly, a certain instability in the circulation of the blood which particularly affected the brain. He considered that, as a result, every functional change in her organism, even a localized one, immediately produced a striking effect on her psychological activities.

One day she felt worse than usual ; she could neither eat nor sleep and, as was always the case, narcotics had no effect on her. Both sight and hearing were highly hypersensitive. She asked Khovrin to hypnotize her, but as he remembered that she considered hypnotic influence harmful, he refused and suggested a different treatment. She was told to put her hand on a magnet and concentrate on any impressions she received as a result. She was told that she would feel a pleasant, calming influence spreading through the whole of her body, starting with her hand : she would become cheerful and happy and then, having fallen asleep, she would wake up in a pleasant mood. In other words, it was suggested

to her that while fully conscious, she should experience certain sensations.

This experiment was perfectly successful : within two minutes she had a good reaction and in thirty minutes fell asleep, awakening three hours later in much improved condition. This incident occurred on 16 May 1891, and with it commenced a new phase in the work of Khovrin with Miss M.

During the experiments about to be described, the magnet was not used : Khovrin simply held her wrist and applied suggestion. In this way her fits were delayed, or altogether stopped for a certain time. With this method of suggestion during the conscious state other phenomena could be produced, such as the strengthening or weakening of the memory, pleasant or unpleasant hallucinations and a change in the functions of higher organs, while all the time the patient kept her faculty of introspection concerning the experiments to which she was subjected. The influence of suggestion, also, was extended to the unconscious functions which, Khovrin asserted, helped him in checking and guaranteeing that the phenomena which occurred were genuine.

For example, on 26 September 1893 the following experiment took place. In the morning Miss M. had a severe pain on the left side of her back and she was told that, in order to relieve this pain, she would have a piece of hot metal applied to the opposite side. For this purpose Khovrin used a small metal seal, and although Miss M. was told it would be hot, it was, as a matter of fact, cold. As soon, however, as the cold seal was applied to her back Miss M. felt a sharp pain and her skin immediately exhibited a clear, red patch as from burning, exactly the size of the seal, a mark which remained for a few hours. The activity of her heart could also be influenced by suggestion. Miss M. occasionally suffered attacks which verged on angina pectoris and were dangerous, but no drugs produced any calming effect. On 14 October 1893, therefore, it was decided to treat these attacks by suggestion, which proved so successful that from that time treatment of the angina was entirely confined to this method. It should, however, be mentioned that the suggestion was effective only if given either before the attack began or before the fibrillation[1] had fully developed.

As Khovrin had a constant care of Miss M., he could not help noticing that from time to time she would make astonishing predictions and he felt that he could not ignore such facts without losing

[1] A form of cardiac irregularity in which the auricular contraction is not rhythmical or orderly. [*Ed.*]

his self-respect. The result of this was that he had to spend considerable time and effort in trying to elucidate them through various experiments. In discussing phenomena of this kind, Khovrin stated that the phenomena of thought-reading as demonstrated by performers like Feldman, whose experiments he had himself witnessed, could be explained by muscular movements and the ability to decipher them. But with Miss M. certain occurrences were more difficult to explain than he would have believed possible. One day she felt very well, being free from pain or from any other morbid symptoms. Khovrin happened to be with her just at the moment when a letter was delivered to her. It was from one of her sisters, but she did not open it and was just holding it in her hand when she became very sad and started crying. She declared that her sister's little boy had died and her sister also was very ill. This indeed proved to be the news contained in the letter. Khovrin thought that this might have been a coincidence, but when she was asked how she guessed it, Miss M. replied that very often she knew what was inside a letter from her relatives even before opening it. After hearing this reply, Khovrin decided on a series of experiments, for, he argued to himself, if Miss M. was able to " read " letters from her relatives in this way, then why not other letters as well ?

The first experiment in this series took place on 21 March 1892 at 20.00 hours. Khovrin took half a sheet of writing-paper, wrote a sentence on it, folded it in four, carefully sealed it in an ordinary envelope and proposed to Miss M. that she should try to read what was inside. After repeated refusals, she finally yielded to his persuasion, having first stated, however, that nothing would come of it. Indeed, she continued to talk on other subjects while already holding the letter, until he asked her directly to concentrate on her problem. Then she began looking attentively at the envelope and moving it between her fingers, as if she were receiving some sensations which she was trying to define. After two or three minutes of concentration she said that it seemed to her that there were the words " Sofia Aleksandrovna " and also something more, but she was so exhausted that the experiment had to be interrupted. Since these words were in fact in the letter Khovrin became interested, and upon leaving her suggested to her that she should try to find out what was in the envelope and tell him the next morning. Next day, she sent him the envelope on which she wrote " Sofia Aleksandrovna,[1] you should recover ". This, indeed was the sentence he had written. After careful inspection of the envelope through a magnifying-glass,

[1] Sofia Aleksandrovna was the name and patronymic of Miss M.

Khovrin was unable to detect any traces of it having been opened. Moreover, when looking at it against the light, he was unable to see a single word.

When Khovrin saw Miss M. later on that day, she told him that she had felt that she could read the text. She had then taken the envelope in her fingers and all at once, apparently without distinguishing single letters, she had seen the words as a whole. She believed that it was her own imagination, but had written it down on the envelope and was now quite interested to discover if there was anything real in this " guess " of hers ; at any rate the effort of concentrating her attention had made her feel weak and had given her a headache.

This successful trial experiment caused Khovrin to give the matter serious consideration. The alternatives seemed to be either that Miss M. had in fact some unusual faculty or there was fraud involved. He recalled to himself the case of the French experimentalist who had been cheated by his somnambule for over four years.[1] The only way out of this dilemma was, he thought, to give Miss M. further tests and to apply such expert examination that any attempt at opening the envelope would be detected.

The next experiment, however, which was carried out under much stricter conditions, gave no less decisive results. The text was written on standard writing-paper with the sheet folded in such a manner that there were five layers between the written words and the surface of the envelope ; not the slightest trace of writing was visible when the envelope was held up against the light. Having sealed the envelope carefully, he made across the flaps a number of signs in black ink which, he believed, would certainly be affected if the envelope were to be steamed or dampened. Having thus prepared the envelope he gave it to Miss M. at noon, asking her to try to read the text. Two hours later she came to his apartment, imploring him to release her from this experiment, as she was quite unable to read it. Khovrin examined the envelope through a magnifying-glass and found no visible traces of any attempt to open it. Then, regardless of Miss M.'s reluctance to proceed, he asked her to continue with the experiment. She unwillingly gave her consent and immediately applied herself to it. Taking the

[1] This refers to the deceptions practised on Hublier by his somnambule Mlle Emélie, for details of which see N. N. Frapart, *Lettres sur le magnétisme et le somnambulisme à l'occasion de Mademoiselle Pigeaire* (Paris, 1839, pp. 375-398), and cf. the same author's *Lettres à l'occasion du magnétisme et du somnambulisme, à Messieurs Arago . . .* (Paris, 1842, p. 13).

envelope, she handled it between her fingers, crumpling it up to such an extent that she had occasionally to be stopped for fear that she might tear it to pieces : her face wore an expression of serious concentration ; now and then she would make a convulsive movement of her back and altogether she gave an impression of being deeply engrossed and pronounced aloud each word that she "guessed".

The stenographic record taken during the experiment reads as follows :

> "There is a word here 'M-v . . . field surgeon'. There is a word 'poison'—no, 'poisoned himself'. But with what? I know, the first letter is 'm', so it should be '*mishiak*' [the Russian word for arsenic] but no, with opium . . . morphia, certainly."

The words were pronounced with long intervals between each. Then her handling of the envelope with her fingers became convulsive, so that she had to be held until she became calmer. After a moment she said, "There's a word 'love' . . ., love of the sister, there is the letter 'd', something a little meaningless . . . and then of the cousin" and then all at once she wrote on the envelope the following sentence, "Field-surgeon M-v poisoned himself with morphia out of love for his first cousin". This sentence corresponded exactly to the text in the sealed envelope.

At this stage Khovrin had made two successful experiments even though, as he stated, they unfortunately could not be considered conclusive. Although Miss M. did not show any inclination to cheat, nevertheless both envelopes had been left with her for a certain time so that there was still a possibility that she had been able to open the envelopes and read the text. This, however, seemed highly improbable : a control experiment in which an envelope sealed in a similar way was opened by other people gave definite marks of being handled, and when Khovrin asked a professional conjurer to open such a control envelope without leaving a trace he refused to attempt it. In view of the above tests, Khovrin felt compelled to continue his experiments with Miss M. until, after having obtained further results under stricter conditions, he would be able to decide precisely what the situation was.

Accordingly, therefore, a series of new experiments was undertaken with every precaution against any attempt at fraud and, without going into particulars, he stated that these experiments convinced him that Miss M. possessed a singular faculty which he believed was nothing other than an extraordinary acuity of certain

sense organs which enabled her to receive sensory impressions from sources that would not be perceived by normal people. Further, these unconsciously received impressions appeared later in her consciousness in the form of fantastic pictorial images which, however, corresponded with the objects producing these impressions.[1]

Before continuing his account, Khovrin observed that it should be mentioned that he soon noticed a characteristic fact, namely that if during Miss M.'s condition of heightened sensitivity there occurred for any reason a weakening of vascular activity and consequent insufficiency of oxygen, then her nerves would immediately show a decreased sensitivity and her discriminative faculty would decrease or disappear altogether. This faculty, therefore, was very uneven and could be observed only under favourable conditions, for, if such were absent, the experiments were negative. Thus, Miss M. had only a limited ability to demonstrate her faculty and this was a serious handicap in attempts to verify her powers at any given moment in any given circumstances.

Continuing the discussion, Khovrin stated that he was never able to understand or ascertain in what way Miss M. received and represented to herself the sensations. Since this was a purely subjective process, only the self-observation of the subject could throw any light on it and this Miss M. did exceedingly well in a statement that he asked her to write for him about her own sensations during the experiment. This in summarized form is what she wrote :

" According to your request, I shall try to explain, as well as I can, what happens to me when I try to read the sealed letters. When I receive such an envelope with the suggestion that I should read it, I immediately develop a feeling of resistance ; I begin to feel unwell and irritated and then this feeling changes into an opposite one, a wish to read at any cost the sealed text. . . . Gradually this wish becomes so strong that I can think of nothing else except the envelope. At such a moment I want to have it near me and I feel that I can't do without it. I want to be very much alone, without a sound and without a light ; I cannot stand the presence of strangers around me ; their movements and even their breathing disturb my concentration.

[1] It seems unfortunate that Dr. Khovrin in this series of experiments did not go into particulars with regard to the precautions he took against any attempt at fraud. Moreover, one of the most important facts that the reader was, one might have thought, entitled to have, was whether in this series Miss M. always had possession of the sealed envelope before it was finally handed to the experimenter to test whether the reading of the contents was correct.

I find Dr. Khovrin's theory of an " extraordinary acuity of the sense organs " very obscure and I do not understand how he supposed Miss M. received sensory impressions from sources not open to ordinary people. [*Ed.*]

Those whom I know well disturb me less. At such moments I have a strong wish to hold the letter in my hands as closely as possible, or even to tear it. In this state of tension I have little knowledge of my surroundings and I feel, as it were, inside myself. I cannot explain clearly what I feel ; it is more like a kind of half-dream. There appear then a few very short moments when I see separate words as clearly as if they were written before me ; sometimes these moments are longer, so that I manage to catch whole sentences and to notice the size of the letters and other details. At times I begin to see fantastic pictures, first muddled, but later so clear that they seem real. As soon as a word or a picture clearly appears my tension begins to slacken and I come to myself, feeling tired and having an awful headache. A need for such deep concentration happens, as you know, two, three or even five times during one experiment ; occasionally there is only one such ' attack '.

Before other people I can seldom concentrate as well as when I am alone. You ask for demonstrations from me in the presence of strangers. But what can I do if I cannot, as it were, ' go deep down ' when they are around. My concentration breaks down when I begin to fall into the unconscious state. The idea that I am being observed, that they look at me with prejudice as if I were a cheat or a conjurer—all this disturbs me greatly. Besides, it's all the same to me whether they believe me or not. For me personally, this faculty is entirely useless."[1]

The results of his experiments led Khovrin to the conclusion that Miss M.'s unusual gift was an absolutely real and genuine faculty. On the other hand, he knew well that such a faculty as this was denied by all scientists and that orthodox science would have nothing to do with it. Like his medical colleagues, he himself had been sceptical until he was faced by what appeared to be plain facts. It was, therefore, most important for him that these facts should become accessible to his colleagues under all possible available controls. There then followed a series of experiments carried out either by one or several experimenters, who were mainly physicians although one was an expert connected with the post office. Each of these experimenters gave tests with various controls known only to himself, some giving her two or three texts to read, but no matter how strict the conditions were there was never any trace of an attempt at opening the envelope. In discussing these experiments, Khovrin in the present paper quoted only a few of them. Two of them, he writes, were reported at length in the journal *Voprosy Filosofii* [Philosophical Problems] and in the protocols

[1] It is not clear from the above whether Miss M. was in a hypnotic condition during the experiments, but it is obvious from her own account that she was in an abnormal state which might have been closely allied to what early observers called the magnetic condition.

of the St. Petersburg Society of Experimental Psychology, 1892 and 1893.

In the protocol of this society for 3 November 1893 it is recorded that, after an exhaustive discussion of the problem as to how best to conduct the experiment and conceal from the clairvoyant the text that she was supposed to read, the meeting unanimously accepted the following procedure. Each of the nine members at the meeting wrote on a sheet of standard paper a short sentence of two or three lines in such a way that no one knew what the others had written. This sheet was then folded, wrapped in another sheet of paper and put into an envelope. All the envelopes were then placed in a hat, from which the Vice-president, Mr. Fisher, took one at random and burned the others. The envelope picked out by Mr. Fisher was then put into another thick envelope and glued to it inside in two places. This envelope also was glued and stapled in four places across the flaps with special clips.[1]

As a further precaution against fraud a seal of the society, similar to those used by public notaries, was placed on the middle of the envelope. The letters on the seal were arranged in relation to two points made on the envelope by a pin and visible only under a magnifying-glass, and beneath the seal, but invisible from the outside, was placed a tiny piece of hair. If either Miss M. or anyone else removed the seal, the hair would also be removed without being noticed and if the envelope were exchanged a counterfeit of the society's seal would have to be made, which itself would be a difficult task.

Such were the measures and controls which were applied to the problem that Miss M. was supposed to solve. Khovrin received the envelope in a wooden box, properly secured with strong string, the ends of which were fastened to the box by a post-office seal. The box arrived on 9 November, but the experiment did not begin until 18 November.

At first Khovrin wished to make a trial experiment in order to determine if Miss M. could read the text when it was still enclosed in the box, for he considered the fastening of the box was absolutely foolproof.[2] Some interesting results were obtained in so far as,

[1] A detailed description of these clips was given in the 3 April 1893 protocol of the society.

[2] Details of the post-office seal not being given, it is impossible to say whether this seal was foolproof as Khovrin believed. If the seal was lead and was of the same type as that used in the French post office, it is far from foolproof, as I once demonstrated at the Institut Métapsychique. [*Ed.*]

without touching the envelope, Miss M. was able to discuss certain details concerning the text. Unfortunately, owing to unforeseen circumstances, Khovrin, about this time, had to leave St. Petersburg so that the experiment could not be resumed until January. During the trials, Miss M. handled the thick envelope in her fingers so roughly that again there was risk of having the inside one torn, which indeed did happen. After several sittings, Miss M. wrote on the outer envelope that what she saw in the text was " I'm convinced that you will read my letter easily and without trouble and that afterwards you will feel magnificent. Petersburg, L. G. Korchagin." She said that this text was written on unlined paper occupying three and a half lines, the handwriting being medium sized and uniform.

As soon as Miss M. had solved the problem Khovrin sent the result to St. Petersburg and at a sitting of the Society of Experimental Psychology on 3 April, 1893, the outer envelope was examined by an expert who declared that no traces of fraudulent handling were to be found. Then both the envelopes were opened and the original text compared with Miss M.'s reading, which proved to be entirely correct. Consequently the members at the sitting came to the following conclusion, which was drafted in these terms : " It is highly probable that the fact of clairvoyance in this particular case was authentic and it is therefore most desirable that the experiments with Miss M. should be continued ".[1]

Khovrin himself was not completely satisfied with the result of this test, since in his opinion the controls applied by the society were not absolutely foolproof. Fortunately, however, Miss M. agreed to make another similar experiment with stricter controls and particularly with the assistance of a person familiar with such matters. He therefore asked an expert from the post office, Mr. S. A. Stroganov, who had never before met Miss M., to prepare for her a problem according to his own requirements. On 13 April, therefore, Stroganov gave Khovrin an envelope, closed with his own wax seal and with a number of various signs across the flaps. On 17 April Miss M. returned the envelope, on which she had written, " There are things in this world we never dreamt of ". The envelope was at once passed to Stroganov and on the next day the following statement was received from him.

[1] In view of the rough handling that the outer envelope had received at the hands of Miss M., which was of such a nature that even the inside envelope was torn, it might appear that the committee were, perhaps, not altogether justified in their acceptance of the expert's views that no traces of fraudulent handling were to be found. [*Ed.*]

" After minute examination of the outer envelope by myself and other experts, it was found to be in the same state as when I gave it to you. My personal seal placed across the flaps did not show the slightest traces of being handled, or the flaps of being dampened or steamed. The figures and signs on the envelope, even the finest ones, have been examined through a magnifying-glass and show the same state as before the experiment. After the envelope was cut open, the interior was again examined and found free from any handling : the letter itself was glued to the envelope precisely as I did it myself and a very thin tape made from special material that was used to tie the inner envelope crosswise was also intact, together with its ends glued to the envelope. Obviously, if the letter were taken out of the envelope, it would have been torn out and the tape binding would have been torn out also, but no traces of this have been discovered. The sentence I had written was as follows, ' There are things in this world the wisest men did not dream of '. The sheet of paper was folded in such a manner that even if there were a possibility to look at it against the light the words of one line were covered with the words of another and were entirely unreadable. This sheet was wrapped in another clean sheet, which was also folded in four and the envelope itself was of very thick paper so that reading the text against the light seems to me absolutely impossible. I cannot refrain from expressing my amazement as to how Miss M. could guess my text under such unnatural conditions."

Another experiment of this kind was conducted under the competent control of a psychiatrist Dr. N. Shchelochilin. In this case the envelope which he gave to Khovrin was larger than those used in former experiments and there were the usual wax seals and signs in coloured inks on the flaps. As soon as it was received it was passed to Miss M., who came to see Khovrin on the morning of the next day and declared she did not see any words, but as soon as she began to concentrate there appeared before her a picture of a fire as if in some large building, but not precisely a house. She was able to see the building without the roof, surrounded by thick smoke and flames. There were people moving about at a quick pace and also some objects flying about like birds. She declared that she was afraid that this picture did not correspond with the text and that it might be pure fantasy. For some reason or other this was the only thing which she was able to see and he advised her to describe this hallucination in detail, which she did and her note, together with the envelope, was handed to Dr. Shchelochilin.[1]

[1] It is to be observed that in this case Miss M. apparently did not take the envelope away, but read the contents immediately Khovrin handed her the envelope. As we shall see, it would not have made any difference if on this occasion she had taken the envelope away with her.

This experiment was the subject of discussion at the Tambov Medical Society on 4 May 1894, when a protocol concerning it was drawn up and reads as follows :

" Dr. N. Shchelochilin has made the following declaration :

For a controlled experiment of reading a text in the sealed envelope I took an unexposed photographic film on which I wrote in the dark room illuminated only with the red light, several words. The film was put in an opaque envelope, impenetrable to ordinary light and then in a properly sealed ordinary envelope. If the film were exposed to light for one one-hundredth part of a second, and even to the light of the moon, it would distinctly show when developed by hydroquinone. The envelope was handed to Dr. Khovrin and the text was read by Miss M., with the exception of the last two words that were written very indistinctly. On receiving the envelope back, I developed the film, which showed no traces of being exposed, indicating that the envelope had not been opened. My text was as follows, ' A fire, some building is burning, am awfully afraid '."

Besides these three expertly controlled cases there were many other experiments carried out with Miss M. by various people under equally strict conditions, the specific controls being known in each case only to the given experimenter. They all came to the conclusion that there were no grounds to suspect that when Miss M. took the envelope to read the text she used any fraudulent methods. To illustrate how strict and how different were the controls applied to those problems that Miss M. was supposed to solve without witnesses, Khovrin quotes an excerpt from a letter written to him by his student Lavrov, who was one of the experimenters. He writes :

" My text was written on a half sheet of standard paper, folded in two. I wrapped this in a sheet of yellow paper, so that the first sheet could not even be seen without first unwrapping it. Then, from the same yellow paper I made an envelope of irregular shape, gluing it with carpenter's glue and putting six seals from the mental hospital library across the flaps. Inside, the first envelope was glued to the yellow paper. The outer envelope was then put into an ordinary postal envelope and sealed with eleven seals of various kinds, both wax and otherwise and imprinted by a certain gadget from the laboratory."

Lavrov's letter remained with Miss M. for three days. On 2 June 1893 she brought it back in the morning with the following words written on the envelope in her own hand, " Large country road ; trees on the side of the road ; one can see a coach (*tarantass*) and there seem to be two persons sitting in it ; one, it seems to me, is an elderly man who wears some sort of heavy coat, next to him is a woman with a white umbrella above her head. Signed, S. M."

Without quoting in detail Lavrov's minute examination of the envelope, Khovrin contented himself with merely giving his student's conclusions. These read as follows :

" After a most thorough examination of the seals, and of the envelopes, I am able to conclude that it was positively impossible for Miss M. to open the envelope, read the text, and put it back, forging all the seals. It is necessary to admit that she has indeed some special faculty for reading hidden texts and for imagining very realistically (even to the point of hallucination) pictures corresponding to what the experimenter had written. My text consisted of the following sentences. ' A large country road, with trees growing on both sides. In the distance one can see horses drawing a coach—a *tarantass*. There are two passengers sitting in the coach : an old man in a heavy coat and a young woman in a summer suit, with a white umbrella above her head.' "

The statement was signed by " Lavrov, fifth year student at Tomsk University. 8 July 1893."

It should be added that while reading Lavrov's text and until she had finished with it, Miss M. had not seen him at all. She had now read no fewer than forty similar texts.

Having described the experiments with Miss M. in which occasionally she took the envelope away from those who had prepared it and read the contents later, Khovrin then dealt with tests which took place in the presence of other persons and when she herself never held the envelope when alone, even for a moment. As has already been said, Miss M. had at first found it quite impossible to experiment in front of other people. In her letter quoted above she had explained that her power of concentration or, as she put it, " entering in herself" was disturbed by being observed and by the suspicious attitude of some of the witnesses. It was only after she had successfully performed a number of strictly controlled tests that Khovrin managed to persuade her to experiment in the presence of other witnesses and it is these, according to Khovrin, which supplied the final proof of her unusual faculties.

The first experiments of this kind were conducted by Dr. Andreev and by the student Lavrov who had now himself qualified, and the following method was adopted. Andreev prepared for the well-controlled test a text, the contents of which were known only to him and no one else. Lavrov was supposed to hold the envelope, while Khovrin himself was present only as a passive observer. Miss M. was allowed to hold the envelope in her hands only in the presence of all of them. At the end of the sitting, Lavrov would take away the envelope and hide it in a place known only to himself.

As always, the envelope was entirely non-transparent when held against the light and there were a number of seals, wax and other controlling devices. The series started on 24 June 1893, and continued through nine sittings, up to and including 13 August. Unfortunately, they were continued in most unfavourable conditions which explains why they took so long. The only room available for experiment was a cabinet where mental patients had electrical treatment. It was situated on a corridor where there were many echoes and there was a continuous noise from various doors being opened and shut, from the loud talk of people passing by and from the coming and going of the hospital staff. All this disturbed Miss M. greatly : whenever she began to fall into her state of concentration and to see the hallucinatory images, a noise of a door slamming or a loud conversation would interrupt the experiment. Also, this room was not always available and the séances could not take place daily.

During the sittings Lavrov made notes, while Khovrin watched intently Miss M.'s movements to see that she did not break the seals, since occasionally she became violently excited and would even throw the envelope on the floor. Unfortunately, after 9 July the sittings had to be interrupted because Miss M. was supposed to visit her relatives and Khovrin suggested that the experiment should be abandoned since it had not produced anything conclusive and seemed to affect her health. But Miss M. strongly insisted on having another chance to solve this problem : she was convinced that she would finally succeed, since the darkness which at first seemed to cover the whole picture was beginning to dissolve and she was able to see trees and other objects. It was decided, therefore, that upon her return the sittings should be resumed. Meanwhile the envelope remained in Lavrov's keeping and the matter was not discussed with Dr. Andreev.

On 11 August at 13.30 hours, the sittings again began, being held in the same place as before. Miss M. appeared to be rather excited and she seemed to be trying hard, as it were, to get at the text with her fingers. She then fell into a kind of trance condition : remaining motionless, she seemed to look with her eyes at something in the distance without moving or blinking : her pupils became first wider, then narrower and her sensitivity was almost reduced to nothing : pricking her skin with a pin produced no reflex and when Khovrin raised her arm it remained in the air. It was obvious that Miss M. was undergoing hallucinatory impressions, a condition which had not been observed before. For some minutes she remained

motionless, but before bringing her out of her trance condition Khovrin decided to ask her a few questions. The dialogue proceeded as follows :

" Sofia Aleksandrovna, do you see anything ? " (Whispering) " I see . . ." " What do you see ? " " White, like . . ." " What is there ? " " Everything white . . . snow . . . sand . . ." " Look better, what is it ? " Silence. " Do you see anything else ? " " On the right side . . ." " What is there on the right side ? " " Trees . . . not many . . . leaves . . ." " What trees ? " " I don't know." " Do you see anything else ? " " Straight ahead . . . here . . . there . . ." " What do you see here ? " " Water . . . light . . ." " What light ? " Silence. " Is there anything else ? " Silence.

After having finished speaking, she began to show signs of convulsive movements and Khovrin brought her out of her trance. After awaking, she could remember nothing of what she saw and how she felt, all of which convinced him that nothing would come out of that experiment and it was only owing to Miss M.'s persuasions that it was agreed to have one more sitting on 13 August.

This time the séance took place in the evening at 20.50 hours and for once everything was quiet. After a period of persistent concentration Miss M. began talking of the visual hallucination she experienced, saying, ". . . wide space . . . all in white . . . but it's not snow, it's sand . . . white, white sand . . . like snow ". After two more minutes of concentration she added, " tall trees . . . Oh ! there are three of them, and such large leaves. . . . And here, there's water, a brook runs by . . . water sort of gurgles. . . . Now it's all gone, I see nothing more."

Soon afterwards Miss M. began to yawn, came to herself and said, " Well, now I have seen everything clearly, just as if I were there. Now I am convinced I have solved the problem. But what sort of trees are they ? I have never seen such trees, except in pictures, it confuses me. . . ." Then she wrote, as usual, on the envelope, " I see clearly the following picture : a large space of sandy steppe, the sand unusually white. On the right side I saw clearly three tall trees with wide leaves ; I have never seen such trees before, except in pictures. Under the trees there is a brook, I clearly heard the water gurgling. Everything in a clear light ; the sky also bright but I did not see the sun. I could not read the text that was written on the sheet of paper. S. M."

The envelope was returned by Khovrin to Dr. Andreev, full precautions being taken. He declared that none of the wax seals had been broken and that the control signs on the flaps were in

order. The text, which had been written by Dr. Andreev on the inside ran as follows : " In the sandy steppes of Arabia, three proud palms are growing high, a tiny brook flows gurgling between them ".

To Khovrin and his two fellow-experimenters it seemed certain that during the period of solving the test the envelope could not have been, even for a minute, in the hands of Miss M. except in the presence of witnesses. Lavrov affirmed that while in his keeping the envelope was hidden in a place known only to himself. On the other hand, Miss M. could not have learned the text either from Lavrov or Khovrin since they did not know what it was, and she never saw Dr. Andreev during that period. For Khovrin, the experiments with Miss M. in reading sealed writings were very important, since they were conducted not only by himself but by many other people, including physicians, who were well educated and quite sceptical, regarding the observed phenomena as dubious from the scientific point of view. It would be therefore far-fetched, he stated, to suspect them of conniving in any fraudulent transactions. This fact confirmed his conviction that the phenomena which had been observed only by himself were also free from fraud or illusion and as real as those observed by his colleagues. This being so, he considered it both legitimate and advisable to describe some of his own personal experiments, hoping that these would be of some use in explaining Miss M.'s uncommon faculties.

As has been demonstrated above, Miss M. solved the problem of guessing the written text sometimes by means of visual hallucinations, that is to say, instead of the text she saw pictorial images corresponding to it. At the beginning, that is from March 1892 until May 1893, she was only " reading " the texts. Then, by accident, Khovrin came across an article in *Novoe Vremia* [New Times] in the issue of 8 March 1893, describing some experiments in psychometry which up to that time he had never heard of. Two American writers, Buchanan and Denton, on the basis of similar experiments, had established a new technique which was called by them psychometry. During their experiments the subjects did not read texts, but only saw corresponding images.[1]

This article which Khovrin read on psychometry encouraged

[1] J. Rodes Buchanan (1814-1899) was a professor in the Eclectic Medical Institute in Covington, Kentucky. His book *Manual of Psychometry* (Boston, 1886, and later editions) was first of the many on the psychic faculty which he termed psychometry. William Denton (1823-1883), a lecturer on geology and botany, wrote, with his wife Elizabeth M. F. Denton, a work in three volumes entitled *The Soul of Things ; or, Psychometric Researches and Discoveries* which was published in Wellesley, Mass., from 1863 to 1873.

him to start using a similar method with Miss M., the more so as she had shown an occasional tendency to see figures and colours instead of letters. He first made a trial experiment and wrote on a piece of paper a name of a tree or of an animal or some other object, then folded it several times and gave it to Miss M. to hold, asking her to look at the white screen or else to concentrate with closed eyes and wait until possibly she would see some kind of picture. As these trials gave positive results, Khovrin went on to more regular experiments and one of the more complicated ones will here be described.

He had prepared a number of tests written on identical pieces of standard paper in his ordinary handwriting. Each sheet was covered with a similar blank sheet, both folded in two and put into thick, heavy envelopes, entirely opaque when held against the light. He then picked up at random one of these envelopes and destroyed the others, so that he himself had no idea which text Miss M. was going to work at. During all these sittings, Miss M. held the envelope only in his presence ; otherwise it was hidden in a place which was known only to himself. This experiment took altogether five days, owing mainly to the fact that after fifteen to twenty minutes Miss M. became too exhausted to continue. It was conducted in the electrical room, which has already been mentioned, and detailed notes were taken during all the sessions.

The usual proceeding was that Miss M. tried to concentrate, holding the envelope between her fingers or against her head. Each time she saw a fragmentary hallucination until at a later sitting on 1 June it culminated finally into a distinct and more complete picture. After a few moments she came to herself and then wrote on the envelope " I saw a large room brightly illuminated with many candles and a chandelier ; many people are walking about in couples dressed as for a ball. There is a stage in this room : one of the ladies in a white dress goes up on the platform ; she is holding something in her hands and mounting the stage and gesticulating ; I seem to hear her singing. I do not know whether she is really singing or whether it is in my imagination. The people stopped moving about and they seem to be applauding. S. M., 1 June 1893."

This task was quite perfectly solved, for Khovrin's text was : " A large hall brightly lighted with lamps and chandeliers, ladies and gentlemen in evening-dress walk around in groups. One of the ladies, in ball dress, with a fan in her hands, mounts the stage and remains standing there. Then she begins to sing in a pleasant voice, ' Out in the Storm '. The audience applauds."

This experiment indicated that when in this specific condition Miss M. was able to experience not only visual but also auditory hallucinations.

We have seen that Miss M. exercised her faculty not without difficulty and that while concentrating her attention on the text she was subjected to strong disturbance through her whole nervous system. This difficulty, however, decreased after she became more skilled and her faculties more developed ; she was then able to solve problems in the presence of witnesses even in one sitting, especially if she were not prepared in advance for the proposed experiment. Each experiment, however, was under strict control. For example, she guessed a two-figure number written on a sheet folded five times and indicated the exact spot where the figures were written, while the experimenters were observing her hands during the entire time and she had not the slightest chance of looking inside the folded sheet. Similar experiments, which Khovrin suggests were solved by hypersensitivity of touch, were carried out by the student Lavrov, Dr. B. and many others.[1]

In dealing with these experiments, Dr. Andreev expressed his conviction that both in the experiments with the Medical Society and in the other cases there was no fraud on the part of the patient. He himself explained the phenomena observed by what he described as a morbid hyperaesthesia of sensitivity and did not regard them in any way as contrary to basic scientific principles, while Dr. B. expressed his agreement with this statement.

A still more convincing experiment was carried out by Dr. Speranski and Dr. A. A. Troitski in April 1894 at 21.00 hours when it was nearly dark. Both the experimenters came into Miss M.'s room without previously having any intention of making any experiments. Miss M. was complaining of tooth-ache and was lying down with a handkerchief tied around her cheek. After talking with her for a few moments. Speranski suddenly decided to make an experiment in reading a hidden text. So, while Miss M. was busy talking with Troitski he quickly wrote a sentence on a small piece of paper (12·5 cm. long and 9·5 cm. broad) and rolled it up so that it formed a little cylinder. At that moment Miss M.

[1] It will be observed that Khovrin is suggesting that the solution to the experiments was due to Miss M.'s heightened sense of touch, but there seems doubt that, if we are to accept what Khovrin said, the explanation of these surprising phenomena was to be found in hyperaesthesia. In discussing the case we shall return to this theory and note what other critics have had to say about it in the past. [*Ed.*]

was turned towards the other side of the bed, talking to Troitski, so that neither she nor the doctor was able to see anything of what was being written. Speranski then gave the paper to Miss M., asking if she could find out what was written on it and then went out of the room, leaving Troitski to supervise the experiment. Sitting near Miss M., he did not lose sight of her hands for a moment. For her part she kept handling the paper, looking at the opposite wall and talking loudly of what she saw. The room was a small one, illuminated with a shaded lamp, but the light was sufficient to see what Miss M. was doing. Then she said, " Well, I see something like a table. No, it is a bed. . . . Yes, it is a bed, and there is a big white form lying on the bed. . . . And I see cushions. . . . Yes, now I see a woman lying on the bed and her back with her cheeks wrapped up in a handkerchief. Yes, it's I myself."

Between her visual impressions she talked with Troitski about other matters and when Speranski came back she had just finished saying that she had identified herself in the picture. She could see nothing more and so returned the billet to Speranski as carefully rolled up as it was before. The text read as follows : " Sofia Aleksandrovna lies on the bed and looks at the ceiling ".

Troitski supplied Khovrin with an account of the experiment and stated that he was able positively to assert that Miss M. did not open the note. He had attentively observed all her movements throughout the experiment and he himself had not the slightest doubt that she had read the text without looking at it and without having recourse to any deceptive methods. As an error on his own part was, he thought, out of the question, he had found the result of the experiment completely convincing. Similar statements were made by both the physicians at a meeting of the Medical Society in the spring of 1894.

Khovrin stated that many criticisms had been made of the validity of his experiments, on the grounds that the observed facts bordered on mystical, supernatural phenomena and as such were not acceptable to the scientific world. Such opinions were based, he stated, on a misunderstanding : Miss M.'s faculties should not be attributed to anything occult, since, as had been seen, they consisted in highly unusual, but objectively observable hyperaesthesia of the sense organs and as such should therefore be investigated.[1]

[1] In support of his theory, Khovrin pointed to the necessity of allowing Miss M. to handle the billets when reading them, but it is not easy to see how, by merely handling a folded paper, an exaggerated sense of touch could determine the nature of the sentence written inside. [*Ed.*]

From the beginning of his experiments with Miss M., Khovrin was interested in the question as to how far her faculty could be affected by suggestion. In order to investigate this question, he used what he describes as the well-known method of suggested hallucinations. The first experiment, which was carried out without Miss M. being aware of it, gave satisfactory results and there followed a series of such tests conducted by his colleagues and which proved to be equally convincing. One of them, performed by Dr. Andreev, was carried out in September 1892. From a freshly opened packet of a good-quality white paper, twenty sheets were counted off and one of them was marked on the back with an almost invisible spot for the purposes of identification. This sheet was left lying on the table. Miss M., who was absent from the room, then returned and it was suggested to her that Khovrin's portrait was on the sheet. After she had looked at it for a moment, she declared that she could see his picture very distinctly. The sheet was then mixed up with the other nineteen and Miss M. was asked to pick it up from the packet. She spread all the sheets on the table and pointed without hesitation at one of them, where she said she could see the portrait and indicated its position with the head upwards.

Having examined the other side of the sheet, Andreev ascertained that this was indeed the control sheet and thereupon he reversed all the sheets and asked Miss M. again to point out the one with the portrait. She quickly chose the right one, declaring that the portrait was upside down. The experimenter than repeated the procedure several times, naturally taking precautions against Miss M. following his movements, and every time she chose the correct sheet and indicated precisely whether the head of the portrait was up or down. But when she was asked to pick up the sheet in question when it was mixed with the other sheets, and with the marked side lying on the top, she could not pick out the portrait on any of these sheets.

For this phenomenon, Khovrin appeared to accept the explanation which had already been put forward by Alfred Binet who attributed it to the unconscious perception of apparently unnoticeable details (*points de repère*) on any white sheet of paper, which details, however, were picked up by the subject. In order to show with what realism the suggested hallucinatory images on the control sheets were impressed on Miss M.'s mind, the following experiment, performed also by Andreev, is a good example. He took a control sheet and placed on it a piece of paper with the row of figures 2367823101945. It was suggested to Miss M. that, having looked at these figures she should see them again in the same order on the

blank sheet which, as in the former experiment, she was to pick out of many other sheets. After she had looked at the figures for no longer than one minute, the control sheet, from which the piece of paper with the figures had been removed, was mixed with fifteen others. Miss M. discovered it very quickly and as quickly read on this completely white sheet the numbers that she had seen before. She was asked to read the numbers in reverse order, then every second one, starting from the end, or every third one, starting from the beginning. Every time she performed a given order just as if she had the figures before her eyes. When, however, she was asked to read the figures without looking at the control sheet, that is to say from memory, she experienced great difficulty in repeating even half of them without mistake. As soon as the control sheet was placed before her she was able to read the figures in the given order.

In this test it was obvious that her memory played quite an insignificant role and her success, as in the former experiments, was exclusively due to her association of the suggested hallucinatory image of the figures with details on the surface of the control sheet which she had been unconsciously able to perceive.[1] These experiments had shown that Miss M. was capable of discerning what were practically invisible markings, and the following tests, which were based on discerning various shades of colour, supplied further proof of this.

Khovrin began his account of these experiments by stating that if any kind of coloured paper, say red or orange, was covered by a sheet of standard white paper, then the average person could tell the colour of the underlying sheet without any difficulty ; under two sheets the colours became almost invisible and could only be guessed at. Under three sheets it became impossible to see the colour underneath and of the five normal subjects used for this experiment, none could do it. If, therefore, Khovrin thought, Miss M. were able to discern practically invisible marks on a white sheet, she might well also be capable of telling the colours on paper covered by so many sheets that it would be entirely impossible for a person with normal sight to do so. The first experiment of this kind

[1] These experiments are, of course, familiar to all those who are interested in theories connected with the idea of *points de repère*. In the 1880s the question was much discussed, and in the *Revue Philosophique* for April and May 1884 there are some papers by Binet on the subject. The effect of changing the position of the paper with regard to the portrait can be compared with the observation of E. Jendrássik in his experiments mentioned by A. Moll in his *Hypnotism* . . . translated from the 4th edition (London and Felling on Tyne, 1909, p. 100).

took place during the second half of 1892 and the following procedure was adopted. Khovrin made several copy-books out of six sheets of standard white paper and placed in the middle of each a piece of coloured paper. He then sealed the copy-books in six identical envelopes and mixed them, so that he himself was not able to tell which colour was in which envelope. One envelope was chosen at random and used for the experiment.[1]

The piece of coloured paper inside was thus covered by three pages of white paper and the envelope itself. No colour was discernible when the envelope was held up to the light. Since these tests were intended only for the sense of sight, the envelope remained lying on the table and it was Miss M.'s task to determine the colour inside without touching it. The experiments gave entirely satisfactory results. At first for less than two minutes she was able to see nothing but white, then the envelope seemed itself to acquire a red or orange shade and finally she said that it was either red or a rose colour. On opening it, it was found to contain a piece of red paper. Further tests showed that Miss M. indeed possessed a singularly sharp sense of sight, for out of the eighteen experiments carried out there were only four failures. On two occasions violet was confused by her with orange and in one case she was unable to choose between red and green and on another black could not be distinguished from white.

Another type of experiment illustrating Miss M.'s visual hyperaesthesia was performed as follows. Several small boxes, both round and four-cornered, as used by druggists, were prepared, and in each one was placed a piece of coloured paper. The box with the coloured paper was not put into Miss M.'s hands but was simply held in front of her. None of those present knew which colour was in the box. The first test of this type took place in November 1892 and gave a perfectly positive result. In seven tests, five were successful, but in one case orange was mistaken for violet and in another violet for blue. The same experiment was conducted later, as in former cases, by Troitski and others, and the observers convinced themselves of the reality of these facts. In thirty tests only six were not correct. In the majority of them the disclosure of the colour was made only gradually, as if an increase in the visual hyperaesthesia was taking place.

After some discussion about the possibility that, owing to the partially transparent nature of these boxes, it might be possible to

[1] It is to be observed that Khovrin does not state how the envelopes were randomized. Presumably he just picked out one of them haphazardly.

determine the colour through extreme visual acuity, Khovrin went on to say that what was most interesting about these experiments was that if Miss M. was allowed to hold the envelope or box in her hand she was able to solve the problem more satisfactorily and in a shorter time. Indeed, he noted that her extraordinary sensitivity of touch presented even more interesting and complex phenomena than those of sight. Especially noteworthy was the sensitivity of the fingers of her right hand and especially the palmar surface of the middle finger as far as the first joint. When this spot was pressed, Miss M. experienced an unpleasant and painful sensation. She herself stated that touching the envelope with her middle finger was of assistance in helping her to guess what was written inside. In order to verify to what extent this was true the following experiment was performed.

They took a copy-book of ten sheets of ordinary white paper marked with the figure of 1-10 on one side. With ordinary black ink they wrote on the first page certain figures, then placed the copy-book on the table upside down, so that the first sheet was covered by nine others and, in order to make it quite impossible for there to be any accidental sight of the figures, the first two pages were lightly glued together. The experimenter then began to turn the pages, starting with the tenth and Miss M. was asked to touch each sheet and say when she could discern anything. The first experiment took place on the evening of 20 August 1892. Miss M. touched the sheets with the hypersensitive part of the middle finger of her right hand and only rarely used the other fingers. For pages 10 and 9 there was no response. On page 8 the position of the figures was only vaguely perceived, while on page 7 the position was more clearly localized. She was uncertain at page 6 but the figure 2 and a vague shape like o was mentioned. On sheet 5 the figures 2 and 9 were clearly distinguished. At page 4 the figure 29 was given with certainty and this was repeated for pages 3 and 2. On page 1 the figure 29 was actually written.

From then on various investigators performed similar tests with Miss M. and there were very few negative results. But in each case the answer seemed to come only gradually and to depend on her ability to concentrate. When she felt like concentrating, the experiments proved successful and she was able to tell the characters through more sheets. At other times she would simply refuse to experiment. Such experiments, however, were not quite conclusive since, as Khovrin points out, her sense of touch might have been strengthened by seeing the characters. It was therefore decided to take further precautions so that the visual sense would not in any

way interfere. Blindfolding, unfortunately, could not be employed since Miss M. reacted to it by an attack of giddiness. Another method, therefore, had to be applied, namely covering her hands as well as the copy-book with a thick rug. Under such conditions twenty more tests were carried out with only four failures. It should here be mentioned that Miss M. quite often and on her own initiative tried to use touch alone in reading sealed texts and, while entering into the state of concentration, she would close her eyes as if the sight of surrounding objects disturbed her.

In discussing Miss M.'s hyperaesthesia, Khovrin points out that apart from her acutely overdeveloped sense of sight, she also had a similarly overdeveloped sense of touch. This faculty, it seemed, took a most interesting and unusual form, namely that she was able to discern various colours of different objects without seeing them. It appeared to Khovrin that the axiomatic statement of William B. Carpenter concerning the basic impossibility that the function of one sense organ could be taken over by another was contradicted in the case of Miss M.'s performance. In Khovrin's view there was, however, no contradiction : he believed that whatever sensations Miss M. received by means of touch could be explained by specific properties of the light and its rays and he devised some experiments to illustrate his point.

The first experiment for distinguishing colours by means of touch took place on 17 October 1892 and small skeins of coloured silk, prepared by himself in advance, were used for this purpose. Miss M. was seated on a chair and covered from the neck down with a thick rug, so that it was impossible for her to see anything under it. The experimenter, standing behind her, took the coloured skeins one by one and put them into Miss M.'s hand under the blanket, so that she could not have the slightest glimpse of them. The observers watched every movement of Miss M. and thus were able to ascertain that she never took the skeins from under the blanket to look at them. As was usual with her, she tried to concentrate strongly on the object she held and all the time she gazed fixedly at some white space in front of her, a wall or screen. On this she would see, at first vaguely and then more and more clearly, the colour of the skein. The moment that she saw it, as it were, in front of her, she would announce with an air of conviction the name of the colour. During this first sitting of guessing the colour of eight skeins, she made only one mistake, when she confused yellow with orange. Later, she agreed willingly to continue such experiments and Khovrin's colleagues repeated them dozens of times with various objects such

as pieces of paper, skeins of wool or silk. The results of these experiments led to the question of the means by which the subject guessed colours by touch. Did she distinguish them by tactile characteristics alone, or was she sensitive to specific thermal or chemical properties which were attached to every colour? To this problem Khovrin decided to devote himself by devising further experiments. The question to be solved was whether it could be proved that Miss M. was able to distinguish colours without touching the objects and that it was the light rays alone that influenced the digital receptive organs of her fingers.

In the first experiment, Miss M. was seated on a chair with her back to the source of light and Khovrin directed on to her hands, which she held behind her, rays of light which had been made to pass through panes of variously coloured glass. The results were entirely satisfactory. Rubbing her fingers against each other and fixing her gaze on the white surface, while concentrating strongly, she would then see on the screen the corresponding colours. Out of seven trials, without hesitation she guessed five correctly; on one occasion she confused green with red and once yellow with violet, a mistake which, from the accounts, appeared regularly in Miss M.'s colour guessing experiments. A similar series was repeated several times and equally positive results obtained. Another series, with coloured objects such as pieces of paper placed in glass containers which Miss M. could touch, but without touching the object itself, gave equally positive results. All these experiments, which were usually conducted by or in the presence of other operators, convinced Khovrin that Miss M.'s sense of touch was directly responding to the rays of coloured light. What remained to be explained was whether she reacted to a thermal or chemical action of light, or whether anything else was involved. In order to answer this question, Khovrin devised the following experiment.

They took a longish, wooden box, open at both narrow ends so that it was a sort of tube. On the inside near one end was fitted a piece of ordinary plain glass. When Miss M. put her hand from the other side into the tube she touched the inner side of this piece of plain glass. Through small slits cut on the far side of this glass small coloured discs of glass could be pushed. Colour was then allowed to penetrate through these discs and the plain glass on to the ends of Miss M.'s fingers by light directed from the far end of the tube. To prevent either the experimenter or Miss M. from knowing what colour was being used, the whole apparatus and the lower part of Miss M.'s arm was covered with an opaque heavy cloth so that the

choice of discs to be read and the slipping of them into the box by the hand of the investigator took place out of sight.

When Miss M.'s hand was thus exposed to these impressions produced by specific colours, it was interesting to observe that various colours produced different tactile sensations, such as warm or cold, oily or sticky. She received the most distinct sensations from yellow, red and blue.[1] Yellow gave her a feeling of warmth, and when rubbing her fingers in the yellow light she had a sensation of softness. The colour blue produced on her fingers an unpleasant sensation, as if they were covered with something sticky ; her visual reaction to blue light was also very unpleasant and, for example, she could not stay even for a few minutes in a room with blue window panes without feeling a disagreeable and strange sensation in her whole body. The colour green gave her very similar sensations. Red gave sensations ranging between the yellow and blue, but quite distinct from both, whereas orange and violet produced less marked differences, although in most cases she was able to tell one from the other.

The above experiments indicated to Khovrin that Miss M. possessed the faculty of unconsciously distinguishing by touch alone between rays of variously coloured light. It was logical to ask at this stage whether she could distinguish coloured objects only if they were illuminated or if she could succeed when they were placed in the dark. In order to test this, Khovrin employed the following method.

He took thirty identical test-tubes, placing cylinders of coloured papers in each and covering them with identical stoppers which were cut off flush with the end of the glass. Miss M. had, of course, neither seen nor touched the test-tubes before the experiment. As before, she was seated on a chair covered from the neck as far as her knees with a thick rug, and Khovrin, taking one of the test-tubes at random and not knowing what colour it contained, passed it to Miss M. under the rug and carefully observed all her movements. The determination of the colour was then made under the rug in the usual way : she began to feel the glass with concentrated attention, gazing fixedly at the white screen on which the colour she saw appeared. Khovrin performed so many of these experiments and so many positive results were achieved that he was left in no doubt as to the reality of the facts observed.[2]

[1] Russian *siniy*, which corresponds to the English darker blue.

[2] Cf. similar experiments described by Christoph Schröder in his *Grundversuche auf dem Gebiete der psychischen Grenzwissenschaften* (Berlin, 1924) and the accounts of experiments in the determination of colours in the dark by Dr. A. Tanagra in the *Zeitschrift für Parapsychologie*, April 1926, p. 211, etc., and cf. *Neues Wiener Journal*, 20 Sept., 1926.

It will be observed how very unsatisfactory the account of this experiment is. Essential details which would enable the reader to determine the conditions are omitted. For example, we do not even know where the test tubes were while the experiment was proceeding. It is quite clear that Miss M. would have been able, had she so wished, to see at least some of the things that were going on and Khovrin says nothing about the exact procedure whereby the tubes were put under the rug. It may well be that all these details exist in notes Khovrin made at the time and if this be the case it is unfortunate that he did not publish at least one example of the notes that he made so that the reader would be able to judge from this example the true nature of the other tests that he recorded. As it is, the critical reader must gain the impression that Khovrin might not have been the highly critical and competent experimenter that some supposed him to be.

After Khovrin had reached conviction as a result of his own experiments, he asked a number of his colleagues to repeat and control the tests and demonstrate conclusively the reality of Miss M.'s faculties at a meeting of the Tambov Medical Society in April 1894. The director of the hospital dispensary brought to the meeting a number of little stoppered medical phials containing transparent solutions of various aniline dyes. Miss M. knew nothing of the procedure at the beginning of the test. Khovrin himself had brought a number of closed test tubes containing coloured solutions and pieces of coloured silk and paper so that no fewer than sixty experimental objects were available. Each of these objects was surrounded by a glass cover and the experiment was directed solely towards the problem of the thermal and chemical qualities of the coloured rays reflected from the objects. The visual sense had to be totally excluded and this condition was effected by the experimenters of the Society in charge of the tests, the President, Dr. M. P. Yakolev, and Dr. M. A. Knishin. The experimenters stood behind Miss M., who, as usual, was seated on a chair and covered with a thick rug from neck to knees, and they put the various tubes under the rug in any order they liked. The others standing round were able accurately to observe all Miss M.'s movements. Out of fifteen trials only four were failures ; once she saw both yellow and red on the screen, when the object was orange ; she also confused blue with violet. The experiments were so convincing that the Society stated that " Miss M. has established a quite extraordinary power of differentiation through hyperaesthesia of the sense organs ".

In spite of what Khovrin had observed of the phenomena of

what appeared to be the substitution of touch for vision, the facts seemed to him so puzzling that he determined to make further attempts to find some satisfactory solution. For this purpose he conducted the following experiment. Taking seven sheets of absolutely identical writing paper, he marked one of them on the reverse side with a hardly noticeable point. This control sheet was then laid before Miss M. and it was suggested to her that on this particular sheet there was a five kopeck coin. She was supposed, however, not to touch the sheet and to perceive the coin on it only by sight, so that her sense of touch played no part in receiving this impression. As soon as Miss M. had declared that she could see the coin on the paper quite distinctly, the control sheet was mixed, without her seeing this, with the remaining sheets. Since she was not to touch them, the sheets were spread before her on the table and she was asked to distinguish the sheet with the coin by using only her sight, which she did. Then the sheets were again mixed and Miss M., with her hands covered by the rug, was asked to identify the control sheet again, touching the sheets under the blanket, in other words using touch instead of sight. Indeed, when she came upon the control sheet, which was third in the package, she declared that she felt on it a circle in relief and she had the impression that a coin was lying on it. She asked that this sheet should be put on one side without showing it to her. In the case of the other sheets she had no impression. At Miss M.'s request the experiment was repeated as before and she again received an impression of touching a coin when she came across the control sheet. This experiment proved that a visual hallucination given to Miss M. subsequently produced a tactile hallucination corresponding to the original visual image of the coin. Khovrin then gave details of an experiment which reversed this experiment, showing that the applied suggestion produced first the tactile hallucination which subsequently gave a visual impression as well.

It might be noted that one essential detail that Khovrin omits in his account is the precise nature of the " hardly noticeable point " on the control sheet. We do not know how this was made or in what it consisted and it would be unprofitable to discuss the experiment at all without this information. Also, if we understand the conditions of the experiment rightly it would appear that Miss M. had ample opportunity to make some tiny mark on the control sheet and thus be able to recognize it quite clearly later. Unless it is possible to eliminate all such sources of error in tests of this kind, their scientific value remains very slight.

Results of a similar type were obtained when experimenting with Miss M.'s sense of touch and of taste, and here again supposedly by using touch alone she was able to distinguish various flavours. Several bottles were prepared, containing colourless and odourless solutions, each substance with a different taste, such as sweet, sour, salty, bitter or metallic. These solutions were of medium concentration but to the average person they gave quite pronounced gustatory impressions. A piece of absorbent cotton or blotting-paper was then soaked in one of the solutions and applied to the skin of Miss M., on the inside of her right hand or between her fingers. Miss M. was naturally given no opportunity to touch her mouth with her fingers for, as usual, all her movements remained under strict control. Upon feeling the wet substance on her skin Miss M. would again concentrate her attention strongly and then gradually receive at first vague and then more and more distinct sensations of a specific taste.

This particular faculty of Miss M. was tested under severe conditions of control by Dr. Nikolski from Kiev in August 1892. Into identical unlabelled glass containers were poured such solutions as sugar, cooking salt, zinc sulphide and quinine. Although Khovrin himself was not present, he recorded the fact that Nikolski, taking the containers himself at random and without knowing himself which solutions they contained, soaked the blotting-paper and applied it against the subject's skin, on the inner side of her right arm. In every case she gave the right answer. The same experiment was demonstrated at a meeting of the Tambov Medical Society in April 1893 and later several of Khovrin's medical colleagues and others repeated it several times.

Having discussed some curious experiments with the sense of hearing using tuning-forks laid on the finger tips, Khovrin proceeded to stress the hypersensitivity of taste which Miss M. possessed by describing another experiment. Several identical glasses were taken and filled to the same level with clear water poured from the same jug. In the absence of Miss M. a clean, well-washed gold coin was placed for a few moments in one glass and then taken out with a clean silver spoon. On tasting the water from each glass Miss M. was able to say without mistake which water had been in contact with the coin.

Khovrin did not succeed in obtaining a direct experimental proof that Miss M. also possessed hypersensitivity of hearing ; there is no doubt, however, that visual impressions did produce in her auditory hallucinations, and vice versa. Sometimes at night she

would wake up in a dark room hearing near to her distinct steps and at the same time against the window she would see a moving figure. This terrified her so much that she would run undressed and screaming from the room in order to awaken the staff. It was obvious that some small accidental noise, perhaps the rustling of her linen, provoked a definite auditory hallucination and then this became the source of a visual hallucination.

The scope and methods of experiments conducted with Miss M. persuaded Khovrin that what had emerged was a positive proof that his subject was gifted with unusual hyperacuity of the sense organs, a fact which had been observed by many independent researchers, thus proving that any possibility of fraud on the part of Miss M. was out of the question. He thought, also, that the fact that these researchers belonged in most cases to the medical profession implied that they were competent, educated and, as a rule, sceptically disposed to the phenomena under observation.[1] Despite their scepticism, however, they had to admit in this case the reality of the facts observed and this was the opinion not only of individual investigators but of commissions. Such, for instance, was the last Commission, composed of a number of physicians and others connected with the Medical Society of the Tambov Government. In August 1896 this Commission carried out a series of experiments which sometimes lasted for up to two hours at a time and were conducted with such severe controls that neither fraud nor illusion could interfere with the results. Khovrin himself had no active part in these experiments : the subject was entirely under the control of members of the Commission, who issued the following statement at the end of the enquiry.

> " All the experiments carried out and controlled by us produced on us the impression that Miss M. is indeed gifted with a hypersensitivity for discrimination of the senses of sight, touch and taste. During the experiments she had no recourse to any trickery and employed exclusively her own faculties. Signed : Maslovski, Rakov, Gostev, Charykov, Babkevich."

Khovrin stated that he had stressed almost exclusively his positive results with Miss M. rather than the negative findings, because these were so few, although these failures had led many an

[1] Dr. Khovrin was doubtless disposed to favour the competence and scepticism of his own profession, but the history of animal magnetism shows that the greater proportion of credulous and incompetent investigators was to be found in the medical profession. Indeed, Parrot in his book (1) published in St. Petersburg in 1816, expressed the opinion that investigation of magnetism should not be entrusted to medical men, since their system of thought easily led to a belief in the marvellous. [*Ed.*]

experimenter to believe that doubt should be cast on the whole. He had several times heard it said that if Miss M. actually possessed such a faculty, then it ought always to show itself in the same way, as otherwise doubt might be cast on it. He thought this opinion not well founded since it implied that the faculty of the subject possessed a special quality which had nothing to do with the nervous system. The whole psycho-nervous disposition of Miss M. was at all times of a fluctuating character ; it should therefore be easily understood that the experiments with Miss M. could not always be successful. Particularly difficult to estimate were the experiments with colours perceived by touch and not sight. It appeared to some observers that chance played too great a part and that sometimes too great contrasts were noted, as, for example, when Miss M. gave white for black, green for red and violet for orange. When the number of failures rose, Miss M. became more and more uncertain as to the correct answers.

At least two authorities had occasion to deny that Miss M. possessed this faculty. The experiments which gave the impression were as follows. In one experiment a closed box painted black both inside and out, 45 cm. long, 22 cm. high and 20 cm. broad, was fitted with a close-fitting and non-removable cover and there were two openings, on the right and left, for the insertion of both hands. To each of these openings was fitted a sleeve made of opaque cloth of double thickness, thus causing complete darkness inside the box. A part of this experiment consisted in Miss M. baring her forearms up to the elbow and then inserting her hands through the sleeve into the box, which already contained the glass containing the coloured piece of silk. Thus the colour could be perceived only through the sense of touch.

In another test the preparations were even more careful. In a water-filled corked test-tube which was in the box there was an opaque little soldered ball connected with a rubber balloon outside the box by a little tube projecting from the cork of the test-tube. The little ball contained some aniline dye. By pressure on the balloon the little ball burst, or it was opened from outside by a wire running into the tube. In breaking the soldered portion of the little ball the solution gushed into the water of the test-tube and coloured it. This apparatus made prior knowledge of the developing colour to be mixed during the experiment impossible. A part of this experiment was successful, but another which occurred during the menstrual period was accompanied by less favourable results, a possibility which Khovrin had already mentioned to the

experimenters.[1] Khovrin gives the following table showing the results of these two experiments.

No.	*Test material*	*Colours perceived by Miss M.*	*Colour given by Miss M.*	*Actual colour*
1	Tests with coloured silk	Two bright clouds following each other: red and blue then yellow	Yellow	Violet
2		Green, mingling with red: red disappears: green remains	Green	Green
3		The white screen appears completely red: the colour does not change	Red	Red
4		Blue appears on the screen, then red, which soon disappears and blue remains	Blue	Blue
5	Test tube with coloured ball	First impression is blue which becomes paler and disappears, the screen remains without colour	Sees nothing except white	Tube filled with clear water
6		Yellow first appears on the screen, but quickly disappears, then two other colours, blue and red, both later being replaced by lilac	Violet	Yellow
7		Two changing colours appear on screen: red and green of similar intensity. She considers her choice and selects red	Red	Green
8		Red and green both appear of similar intensity, as before. On consideration she chooses red	Red	Green

[1] These experiments in determining colour by touch seem to me rather obscure. Since the objects the colour of which was to be determined were in closed containers, I do not follow Khovrin's explanations of successes in these tests, since the object itself was never touched by the percipient. [*Ed.*]

It must be understood, according to Khovrin, that this table, without accurate analysis, did not present any convincing proof of Miss M.'s faculty. For example, how was the actual colour perceived? While she was looking at the screen, one or another colour appeared to emerge into the field of vision and thus her decisions were uncertain and she often chose the incorrect colour, saying yellow instead of violet and red instead of green. In some tests she substituted black for white, two colours sharply distinguished from each other. Circumstances such as these led the experimenters to the conclusion that Miss M.'s capacity was doubtful and that the experiments presented no ground for conviction. Indeed, it was suggested that the number of successful assertions could not be considered as proof and that chance coincidence could not be excluded. The same position was adopted by some other experimenters whose tests were not successful and who suggested that successes achieved in other series might have been due to inadequate control conditions.

Having discussed the problem at some length, Khovrin pointed out that one interesting point was that several colours used to present themselves simultaneously to Miss M. and for this reason alone it was difficult to make a choice. On these occasions she generally closed her eyes and then only one colour appeared to her, but on opening them again another colour appeared on the screen. One of these colours corresponded to the one guessed, while the other was incorrect. In order to illustrate this, Khovrin appended a table with examples of successful tests which were undertaken in the presence of a third person, Mrs. T.

After a discussion of these results in their relation to theories of complementary colours and physiological optics, Khovrin summed up certain of his findings and his ideas regarding the reasons why, under certain conditions, Miss M. failed in the tests and suggested that some of these failures might be due to well-understood psychological conditions. As he had already said, Miss M.'s faculties were highly unpredictable and it was always impossible to say in advance whether planned experiments would be positive or not. This did not surprise him and he accepted the situation; what was important was the nature of the results observed when the tests were successful. Owing to his long association with his subject, he believed himself successful in having established a correlation between her performances and certain definite conditions, such as, for example, between the degree to which she was capable of concentrating her attention and the circulation of the blood in the sense organs. This, he said,

had been noticed on many occasions and explained why Miss M. was capable of a far more convincing demonstration in front of those whom she knew than in front of strangers or in the presence of those

No.	*What colours appeared on the screen*	*What colours first appeared on opening the eyes and what on closing them*		*Colour given by subject*	*Actual colour*
		Closing	*Opening*		
I	First a reddish colour, or rather lilac and then yellow	Yellow	Violet	Yellow or orange	Yellow
2	Again yellow, but thinks this the result of the earlier test, then green followed by red	Red	Green	Red	Red
3	Sees only red on the screen : nothing else	Red	Green	Red	Red
4	Screen takes a yellowish tinge, but very pale, then pale violet with a sharper impression than the yellow	Violet	Violet	Violet	Violet
5	First a yellowish and then a reddish shade, both are replaced by violet	Violet	Yellow	Violet	Yellow
6	First violet then yellow which appears sharper	Yellow	Violet	Yellow	Violet
7	Nothing seen on the screen	Every-thing dark	Nothing on screen	White	Black
8	Orange first, then blue or reddish blue, but the orange remains sharper	Reddish blue	Orange	Orange	Orange

whom she found unsympathetic. Such witnesses naturally distracted her and this affected her results.

Circulatory conditions played an equally important role. When, for instance, her hands were warm, the experiments with hyperacuity

of touch were generally positive; when her hands turned cold, which frequently occurred, sometimes in the middle of the experiment, successful results would drop to a minimum. According to Khovrin, such circulatory changes were due to the fact that the system of blood vessels in Miss M. was underdeveloped. During the experiments, when she was exercising her sensory faculties to the utmost, there occurred a marked loss of oxygen and her deficient vascular system led to a deficiency in circulation with a lowering of sensitivity. These factors were a serious handicap to the repeated verification of the hyperaesthesia of Miss M.'s sense organs. Nevertheless, Khovrin considered that her possession of the faculty had been proved under all possible conditions and could not be doubted.

Before discussing the case of Miss M. and mentioning some of the later criticisms of the experiments, it may well be asked whether it can be shown that Miss M. during the tests was in a state which could be properly called hypnotic. This question is not easily answered, since Khovrin himself did not describe with sufficient detail her actual condition during much of the work that he did with her. He uses the word " trance " rarely and, it would seem, somewhat reluctantly and his mentioning of the sudden changes from a normal to what he calls a hysterical state strongly suggests a condition of mild hypnosis. Again, Khovrin's account on p. 40 of one of the sealed envelope tests quite certainly indicates that Miss M. was in a state which could be accurately described as hypnotic in character. On the other hand, certain of the sealed letter tests seem to have taken place under conditions where normality appears assumed by Khovrin, although we have no evidence that some form of mental dissociation was not present.

In June 1894, Count Perovsky-Petrovo-Solovovo, a Russian parapsychologist for many years associated with the Society for Psychical Research in England, had some experiments with Miss M. and Dr. Khovrin. In his account (9) of his experiences he stated that these took place in St. Petersburg and Miss M. was quite willing to give him the opportunity of witnessing her phenomena, an attitude similarly adopted by Khovrin himself. Count Perovsky gained an excellent impression both of Miss M., whom he considered to be both honest and intelligent, and also of Khovrin, whose honesty and veracity he considered to be beyond question.

The account of the experiments was written on the day following them and drawn from notes which were taken at the time. Although Miss M. had been ill and Dr. Khovrin rather doubted whether the experiments would succeed, it was decided to see what could be

done. Perovsky had brought with him some glass tubes containing pieces of differently coloured silk which had been bought the same day, and each tube was carefully stoppered. Khovrin thought, however, that the colours of the silk were too complex and that it might be better to try some aniline dyes. To this proposal Perovsky agreed and Khovrin produced several tubes containing aniline colours which were first emptied out, then refilled and then were wrapped up in paper by Perovsky himself. After this had been done, Miss M. entered the room and sat with her back to the light with her hands behind her back and covered with a shawl. Perovsky gave her one of the glass tubes, but she could not see anything. In the next experiment, nine or ten loose sheets of rough-surfaced, medium-sized writing-paper were selected from a number brought by Khovrin, and one of them was chosen and marked with a very faint pencil mark. A piece or leaf of coloured paper was then placed on the unmarked surface and the whole covered with a double sheet of cigarette paper, so that nothing but the shape and colour of the leaf was visible. Miss M. then entered the room and Khovrin suggested that she would always see this coloured mark on this same sheet of paper. Having looked at it for some time, Perovsky asked Miss M. to leave the room and he then put back the selected sheet of paper among the rest and shuffled them. On returning, Miss M. tried to find the paper and failed. Although his notes are not clear, Perovsky stated that in a second trial Miss M. was successful.

In another experiment, Miss M. was told to see a portrait of Perovsky on a blank piece of paper which had been marked on the back, as before. This test was repeated thrice, and twice Miss M. stated that she saw the hallucinatory portrait upside down, which was found to be correct on reference to the pencil mark on the other side of the paper. Perovsky then went into the next room and turned the page about several times, so that he did not know in what position it was to be presented to the subject who, however, repeated the experiment twelve times without a single mistake. Miss M. herself never touched the sheet, which was placed on a chair at a distance of about one and a half metres, and Perovsky in most cases could not have given her any conscious indication since he himself did not know the position of the mark on the back.[1]

[1] Although at first sight this experiment appears difficult to explain, it would, perhaps, have been better if Perovsky had used a piece of white cardboard instead of paper as on the first successful reading he had to take up the paper to find out whether it was correct and may have inadvertently left a crease which could have been used as a guide later. [*Ed.*]

After one or two other tests, it was decided again to use the glass tubes for the perception of colour. The tubes were wrapped in paper and it seemed certain that she did not see the colour normally. Khovrin had brought with him his specially prepared box (see p. 65), and when Miss M. left the room Perovsky took one of the tubes and, thrusting his arms through one of the sleeves, put his hand holding the tube into the box. When Miss M. returned, she put one arm into the box through the other opening, and he gave her the tube to hold. Perovsky stated that under these conditions it was clear that the sense of sight was practically excluded.[1]

In this experiment, a white counterpane was used in order to see the colours instead of the white screen which was earlier used by Khovrin. The tubes used contained, in order, white, green, red, blue. Miss M.'s impressions were nothing (when white was used this was usually Miss M.'s response), yellow spots, red, blue. On the next day, the portrait experiment was repeated.

Further experiments with the tubes were then attempted. On this occasion she twice said the colour was blue when as a matter of fact it was lilac. Mme Perovsky was interested, and said she would like to try herself, so she put her hand into the box and Perovsky gave her through the other opening a piece of red paper to hold. She looked at the counterpane and said that she saw red, while Miss M., who was sitting near, said that she saw orange. On trying a second time, he used the same piece of red paper and his wife saw blue and so did Miss M. A third experiment failed.

Khovrin then suggested to Miss M., who remained entirely normal, that she was to see a hallucinatory portrait of himself on a sheet of paper which had been chosen and marked on one side by Mme Perovsky. It was covered by a double sheet of cigarette paper. The experiment was successful, Miss M. indicating the way in which the portrait was turned.[2]

It was then determined to try some experiments in the transference of taste. With Miss M. remaining with Mme Perovsky,

[1] I am not certain what Perovsky means by saying that the sense of sight was "practically" excluded and that he is positive that "normal sight" had nothing to do with it. In his account he does not mention any circumstance which would lead the reader to suppose that on any occasion the use of normal vision was remotely possible. We can hardly assume, I think, that the door was left open, and even if it had been it does not seem that this would have assisted Miss M., since the tubes were wrapped up in paper and chosen at random. [*Ed.*]

[2] In all these experiments with paper, it seems very odd that opaque sheets were not used and the semi-transparent nature of what was employed made Perovsky suspect that the pencil mark might have become visible when one sheet was placed on the other.

Perovsky and Dr. Khovrin went out of the room and prepared four solutions of citric acid, sugar, salt and quinine. Perovsky then dipped a piece of thick paper into one of the preparations until it was thoroughly soaked and then placed the paper on Miss M.'s bare forearm, the idea being that in such experiments Miss M. had a peculiar taste in the mouth. Four trials were made. At first Miss M. could not discern any taste,[1] but the second experiment was successful : Miss M. said that she tasted something like salt, which was correct. The third was a failure : it was quinine, but Miss M. said it was something sweet ; and the fourth was again successful, being salt for the second time.

In one of the cases in which Miss M. succeeded, Perovsky remarked that her success could not have been due to thought transference from himself, as in that particular case he had taken one of the four bottles at random and had not known what it could have contained. Mentioning some of the experiences in taste in which there appeared to be a transference from the mouth of the operator to that of the subject, Khovrin consented to try a test. Retiring behind a screen, Khovrin asked Miss M. what he was tasting and she said that it was something acid, which was correct, since it was citric acid.[2]

Finally, Perovsky tried some telepathic tests with colours. A sheet of white paper was held in front of her and she was asked to say what she saw when Perovsky held a piece of red silk. She said that she saw something red on the table. When Perovsky chose green silk, Miss M. said that it was blue, but according both to her and to Khovrin she always mistook the one colour for the other.[3]

Both Perovsky and his wife appear to have been impressed by some of these experiments and Miss M. herself seemed to them to be a person of honesty and integrity, although these impressions were gathered after a very short acquaintance. Perovsky's conclusions were that nothing definite could be drawn from so limited a series of tests, but that in his opinion the case deserved careful attention. In his view, what he himself saw certainly did not prove the existence

[1] Perovsky states that they had just finished drinking tea. One might have thought that the experiments could have been delayed for half an hour, or that the tea drinking could have been delayed.

[2] From Perovsky's account it would seem that this was the only experiment of this kind, which is somewhat unfortunate since a number of successes might have suggested to Khovrin that his theory of hyperaesthesia of the senses might have to be modified.

[3] This statement does not appear to be confirmed by the tests with colours previously described. See p. 66.

of any clairvoyant faculty in Miss M., but did, perhaps, constitute "one more link in the chain of evidence tending to establish lucidity or second sight as a fact". It is perhaps worthy of note that Perovsky does not seem to have realized the implications of Khovrin's theory of hyperaesthesia of the senses, or perhaps the Russian investigator did not discuss it with him.

On the appearance of the German translation of Khovrin's work in 1919, comment in the German medical press was limited. In the medical weeklies, notices appeared in 1920, such as a note in the *Deut. mediz. Wochenschr.* (Jahrg. 46, p. 217), where the reviewer stated that as a scientific report the account was almost worthless owing to the lack of precautions taken. Short notices also appeared in the *Reichsmedizinal-Anzeiger* (Jahrg. 45, p. 225) ; *Berl. klin. Wochenschr.* (Jahrg. 57, p. 793) and *Wien. klin. Wochenschr.* (Jahrg. 33, p. 1011).

Frh. A. von Schrenk-Notzing, the editor of the German translation (10, pp. 69 ff.) of Khovrin, suggested that in Miss M. there was a kind of dream state and intense auto-suggestive concentration. In many cases the investigator did not know the contents of texts, so a source of error through unconscious indications on his part or direct thought-transference was excluded. In commenting on Khovrin's theories, Schrenk-Notzing mentioned the paucity of experiments in touch where the sensitive was not allowed in any way to handle the object and thus exclude the theory of tactile hyperaesthesia. On the other hand, it must be remembered that Khovrin believed that the phenomena were due to sensitivity of this sort and he therefore would not have understood an experiment in which, according to him, success was linked with a condition which was not allowed. In this connection, Schrenk-Notzing discussed the experiment in which something was written on an unexposed film (see p. 46), and here again the idea underlying the test was that, were the envelope to be opened, the film would have been affected by the light. He said that it did not seem to occur to Khovrin to take a photograph of a word or sentence and then enclose the film in the usual envelopes and see if Miss M. could read it. If success had been attained, even he would hardly have attempted to explain the result through acuity of vision. In concluding his discussion of Khovrin's results, Schrenk-Notzing referred to a number of writers on the sense organs and perception generally and came to the tentative conclusion that not enough was yet known for it to be said conclusively that Miss M.'s faculties were not at least occasionally due to hyperaesthesia of various kinds.

In his discussion of the case (11, pp. 235 ff.), which he described as a beautiful case of cryptaesthesia, Charles Richet, the Nobel prize winner, apparently thought with Khovrin that the facts could be explained, although with some difficulty, by an "acuité prodigieuse" of touch and vision. In his account, which comprised a brief survey of some of the cases, he made no attempt to deal with this extraordinary hyperacuity of the senses, but contented himself with pointing out that in some of the experiments thought-transmission was ruled out owing to the conditions under which they were carried out.

Rudolf Tischner (12, p. 99 : English translation, p. 189) in his criticism of Khovrin's work stated that from his account it appeared that Khovrin saw no other possibilities to explain Miss M.'s faculties except as hyperaesthesia of the senses. On this account Tischner believed that his results might have been better if they had not all been planned in one direction ; from this point of view Tischner made some other observations in *Psychische Studien* (13) in 1919. In the second edition (14, pp. 245 ff.) of his *Geschichte der Okkultistischen Forschung* . . . (Pfullingen, 1924) Khovrin's work was again discussed by Tischner, who showed himself very sceptical of the theory of hyperaesthesia of the senses, considering that such an idea, even from the anatomical point of view, was hardly conceivable.

Richard Baerwald in 1926 (15, pp. 68 ff. and 268 ff.) also dealt with Khovrin's experiments, and as an opponent of occult theories he regarded theories of hyperaesthesia as preferable to those based on belief in the paranormal. It seems clear, however, from his discussion that he was not altogether happy in accepting Khovrin's ideas on the nature of Miss M.'s faculties and it would seem that he preferred to leave the matter open until further evidence could be obtained. In 1927 Baerwald returned to the subject (16, pp. 267 ff.) again stressing Khovrin's view of hyperaesthesia and pointing out with some acidity that whereas the original title of Khovrin's paper did not even mention the word clairvoyance, in the German translation of the same this word was actually included in the title (p. 268). In this paper Baerwald again discussed Khovrin's findings in the light of his own theories and remained apparently unconvinced that anything paranormal could be proved to have occurred during the experiments. It would seem from their criticisms that persons bitterly opposed to occultism generally, like Baerwald, were somewhat reserved in coming to any definite conclusions as probably they themselves realized that a great deal more evidence would have

to be collected before physiologists and others could become fully convinced that performances like those of Miss M. could ever really be due to a so-called " hyperaesthesia of the senses ".

In the first volume of Fanny Moser's work (17, I, pp. 412 ff.) she dealt with the Khovrin experiments and also noted the fact that the title of the German translation differed from the original Russian. These investigations, she stated, were some of the most interesting and noteworthy that had been published. She stressed the fact that Khovrin endeavoured to get a number of other observers to assist him and did everything that he thought possible to avoid being deceived. The various Commissions, also, which were appointed to deal with the case appeared to have been satisfied that, whatever faculties were being employed, the results were not due to fraud on the part of Miss M. Fanny Moser herself, in concluding her remarks, did not appear to be at all certain how to interpret Khovrin's results, although she was more inclined towards a belief in the paranormal nature of some of them than Baerwald. It was certainly unfortunate that Khovrin apparently never tried to devise experiments in which any kind of normal explanation could be excluded, so that recourse had to be made to something hitherto outside the range of physical science. It is possible, however, that, had he done so, the experiments might have been unsuccessful, since nearly all his arrangements were such as to suggest to Miss M. that her successes were due to hyperaesthesia.

In view of these criticisms of Khovrin's work it may be of interest to give the views of a modern physicist on the interpretation of Khovrin's experiments from the physiological point of view. He points out that there are three directions in which normal sight can be possibly developed beyond the usual limits. Firstly, seeing in near ultra-violet, or near infra-red light ; secondly, seeing in near darkness ; and thirdly, high definition, such as seeing very small print at a very long distance. There are physiological limits to all three. Reading through opaque matter does not come into this category at all. Opacity is the result of reflection, refraction and diffraction of light. As the opacity increases, the contrast between the signal and the diffused light decreases. At a certain point the contrast becomes insignificant and no amount of extra lighting, magnification or exposure in the case of photography will help. Under normal circumstances a single sheet of blotting-paper is perfectly opaque, and no amount of " hyperacuity " of sight will make it less so, because as the intensity of the signal increases so does the diffusion of light, and the ratio remains the same.

Orthodox Science in Russia in its Relation to Animal Magnetism and Hypnotism

It has already been mentioned that, contrary perhaps to what some would expect to find in a generally backward country, the predominant attitude of Russian scientists in the nineteenth century towards mesmerism, animal magnetism and hypnotism was rationalistic. Even those scientists who did not reject all alleged paranormal phenomena as due to charlatanism or pure superstition tried to explain them or, as it appeared to some, to explain them away, from the standpoint of physics or physiology.

It is interesting to observe that in 1858 the physiologist, Professor B. Bervy (1792-1859), who was noted for his interest in idealistic philosophy, gave a lecture in Kazan University. The students, offended by such an approach, protested to the Dean and after Bervy's lectures had been published they were sharply criticized by the brilliant Russian publicist N. A. Dobroliubov (1836-1861). Among other things Bervy lectured both on the immortality of the soul and on animal magnetism and in 1858 he published his book on a comparative survey of physiology and psychology at the beginning and end of life.

As early as the mid-1850s, for example, we find a statement by a well-known Russian publicist, M. N. Katkov (1818-1887), clearly illustrating this attitude, which remained prevalent in Russia even before the 1917 revolution, when it inevitably acquired an official and exclusive status after dialectical materialism became the only permissible philosophy of the USSR. In an article, written on the occasion of the poetess S. Tolstoy having been treated by animal magnetism, which was quoted in *Rebus* (1887, No. 33, p. 321), Katkov wrote, " We are far from looking at animal magnetism from any mystical, spiritual point of view. There is nothing superior about this state ; and all phenomena of foretelling the future, guessing and clairvoyance are to be considered as authentic only when they are included within the area of physical facts and activities and psychological only in such degree as the whole physiology of the human organism is intimately linked with psychology."

Thus, we should find it difficult to discover in Russia any scientists with reputations in other fields like, for instance, Sir William Crookes or Sir William Barrett in England, who unhesitatingly stated that they were whole-hearted supporters of and believers in not only the higher phenomena of mesmerism but also spiritualistic theories, sometimes of an extreme form.

It must be remembered, however, that Russia in the late nineteenth century, unlike such Western countries as England and France, was inhabited by a vast population which was practically illiterate and existed under almost mediaeval conditions.[1] For example, in central Russia the village *klikusha*[2] was regarded with a superstitious awe while the tribes north and east of the Urals practised various kinds of primitive religious rites where the supernatural element encouraged by their *shamans* and *myuridies*[3] (Central Asian *shamans*) pervaded their daily life. No wonder, therefore, that in such a country the educated classes and the academic élite in particular would tend to the opposite viewpoint and show a marked reluctance to accept anything even remotely connected with the supernormal.

This is probably the reason why the leading Russian exponent of the higher phenomena of animal magnetism, Aleksander N. Aksakov (1832-1903), was not a scientist of any importance, although he had studied anatomy, physiology, physics and chemistry at the University of St. Petersburg. His attitude towards the paranormal was always more enthusiastic than objective, but he exerted a certain influence both in Russia and in the West and his activities must be taken into account, even if with some caution.

Mesmerism and animal magnetism attracted Aksakov's attention quite early and by 1860 he had published at his own cost a translation of Gróf Ferenc Szápáry's *Magnétisme et magnétothérapie* (Paris, 1854), probably from the German translation, which was followed by numerous other translations as well as by original works on animal magnetism and mediumship. At the time when thought-transference was much discussed and experimented with in Russia, Aksakov contributed a translation of his own article from *La Revue Magnétique Internationale* (1879) on Donato and his famous somnambule Mlle Lucille (18), and in a supplement to this article he declared that during a private séance with Donato he had proved beyond doubt the occurrence of direct thought-transference between the operator and his subject. Thus he claimed to have invalidated "the assumption of modern physiology that psychic activity does not reach beyond the periphery of the nerves" (*Rebus*, 1883, No. 35). As soon as the spiritualistic movement appeared in Europe, Aksakov devoted himself to spreading this new gospel, first by

[1] Emancipation of the Russian peasants from serfdom took place in 1861.

[2] From *klikushestvo*, a women's nervous disorder of a hysterical type.

[3] *Shaman* was a medicine man among the tribes of Northern Asia while *myuridi* was from Central Asia.

lectures and articles and later, from 1874 onwards, as an editor of the periodical *Psychische Studien*, which he had founded in Leipzig and which became a mainspring of Spiritualism in Germany. He also published at his own cost the twelve volumes of the *Bibliothek des Spiritualismus für Deutschland* (Leipzig, 1875-6), a major achievement in this field.

Even as a resident of Germany, Aksakov continued his activity in Russia, publishing his own essays or translations from Western sources, as, for example, of Adolphe d'Assier's *Essai sur l'Humanité posthume par un positiviste* (Paris, 1883). We mention this particular work because Aksakov accompanied it by a lengthy commentary expanding his own opinions on mesmerism. He accepted *in toto* Mesmer's theory of an " ether ", which attempted to explain all the higher phenomena of animal magnetism by the manifestations of the mesmeric fluid. " Somnambulism," he wrote, " is only an elder brother of spiritism." He thought that both were directly derived from the action of animal magnetism (*Rebus*, 1883, Nos. 37-44). Aksakov's theories were neither original nor grounded on well-established facts. Nevertheless, among interested circles in Russia his influence was by no means negligible, probably owing to his great energy and enthusiasm as well as to his considerable wealth, which he never hesitated to use for his favourite cause. It might have been due, also, at any rate in part, to the fact that he succeeded in convincing his cousin, A. M. Butlerov, of the reality of animal magnetism and mediumship. A. M. Butlerov was a well-known scientist, Professor of Chemistry at the University of St. Petersburg and a member of the Russian Academy of Science. Consequently, he commanded more serious attention than Aksakov. Also, Butlerov's translations popularized among the Russian public such major works by Western writers as W. Gregory's *Animal Magnetism or Mesmerism and its Phenomena* (London, 1877) and C. Richet's " La suggestion mentale et le calcul des probabilités " (*Revue Philos.*, déc. 1884), the latter author's attitude of open-minded interest towards the " unbelievable facts " being particularly congenial to Butlerov. His own opinions were best summarized in an essay published by *Rebus* (1883, Nos. 65-70 ; Nos. 73-75) under the title " Magneticheskoe i Mediumicheskoe Yavlenia " [Magnetic and Mediumistic Phenomena]. In this article he discussed various hypotheses as to the cause of such phenomena, namely, unconscious activity of the muscles (Cumberlandism), unconscious cerebration (Carpenter), psychic forces inherent in the human organism and spiritistic influence. It is clear from Butlerov's article quoted above

(see p. 78) in which he expressed his view son thought-transference, that for him the most convincing hypothesis would be the third one indicated[1] because, as he said, " Why could not the nervous currents of the human organism act on each other like electric currents ? " In other words, he thought that it was the human organism itself that generated the forces observed to operate in paranormal phenomena. Since Butlerov was a professional scientist, with characteristically Russian prejudice against the supernormal, the spiritistic hypothesis had little attraction for him. Having accepted the reality of mediumistic phenomena, he tried to explain these in a rational way, only to discover, like many other scientists of integrity before and after him, that the paranormal and the rational cannot as yet be easily linked in a logical framework. Faced by this dilemma, Butlerov took refuge in the mathematical philosophical concept of multi-dimensional space which, by its very definition, could contain anything and everything. Although such a concept unfortunately leaves the problem unsolved, there being no means of probing from our four dimensional universe into what is going on in a multidimensional one, Butlerov considered this the most valid approach and expressed his view at the general conference of Russian epistemologists in Odessa on 27 August 1883. We shall observe later that his views were shared by other Russian scientists, in particular by Professor N. P. Wagner.

Professor N. P. Wagner (d. 1907), the zoologist and entomologist of the University of St. Petersburg, was deeply involved in the study and popularization of the paranormal aspects of animal magnetism and hypnotism, which is probably one of the reasons why some of his medical colleagues considered him lacking in critical and objective judgment. Wagner, however, unlike Aksakov, was a serious research worker and had among the scientists a certain prestige, his public lectures being attended by such luminaries of Russian science as Professor I. Sechenov (1829-1905), the " father of Russian physiology ", and he was invited to read papers on hypnosis at scientific congresses or at the meetings of the Russian Medical Association. Since he did not leave any major work, it is only to his lectures and papers that we can turn for information on his experiments and theories, some of which have an element of originality that merits attention.

Wagner was an indefatigable propagandist for the study of hypnosis by medical men. He opened his first series of lectures on

[1] Butlerov admitted, however, that in certain cases Cumberlandism or unconscious cerebrations were solely responsible for apparent thought-reading.

this subject in St. Petersburg (14, 20 and 21 March 1882) with a statement that both animal magnetism and hypnotism were extremely important for a better understanding of physiology and psychology and therefore should arouse greater interest in Russian doctors and psychiatrists who, unlike their Western colleagues, had so far remained indifferent to or even completely aloof from those phenomena. The history of hypnotism, according to Wagner, could be divided into three stages, cultural, philosophical and scientific. As a cultural phenomenon, hypnotism or animal magnetism could be traced to oldest antiquity, but it could also be observed in a very similar form in contemporary times among primitive cultures of Northern Asia. Here he quoted reports of anthropologists who brought from Siberian tribes like the Yakut eye-witness observations of the magnetic trance, such as the following account. A *shaman* comes to the *yurta*[1] with a drum, producing a rhythmic sound. The assembled people sing in cadence. Suddenly the *shaman* falls flat on the ground, with the drum resting on his back and remains in such a position, like a corpse, for about twenty-four hours. No one is supposed to touch him, since this could cause his death. After he wakes up, he relates what he has seen in various parts he had apparently visited while lying in the trance. Such cases of travelling clairvoyance deserved, according to Wagner, a closer study. The philosophical stage of hypnotism was represented by the alchemists and their search for the universal fluid (ether?) ; such names as Paracelsus, Kircher, Maxwell and Robert Fludd belonged here, and if their experiments did not produce more effect this was due to the danger of the Inquisition. It was only due to the liberalism of the eighteenth century that Mesmer and his followers could pick up the thread without the risk of being burnt at the stake. The scientific stage was inaugurated in the 1840s by Dr. J. Braid from Manchester, whose work led to the development of a serious study of hypnotic phenomena first in Great Britain, then in France and Germany.

Bringing under review the current theories of Western research workers, Wagner declared that in his opinion those theories did not stand up to criticism in so far as they all emphasized physiological aspects of the phenomena, whereas his own experiments, especially with the magnetizer Hansen, indicated a different interpretation. As another argument against the physiological approach Wagner mentioned cases of clairvoyance, quoting his own experience with an Italian somnambule who had predicted an illness and had told

[1] A *yurta* was a sort of heavy tent used by Siberian natives.



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him how to treat it. He had indeed fallen ill at the predicted time, but admitted that he had recovered without using the somnambule's prescription (*Rebus*, 1882, Nos. 14, 15, 16 ; pp. 221-222, 227-229, 236-237).

As has been said, Wagner considered the phenomena of magnetic trance and clairvoyance to be of central interest for a scientist[1] and devoted to this subject a series of experiments with the magnetizer P. Roberts whom he greatly respected. As has already been said, Roberts had enjoyed in Russia a great popularity ; in *Rebus* from 1882-1883 we find over ten reports of his demonstrations and magnetic cures, all fully documented and attested. Wagner was present at a private séance organized by Roberts for scientists and doctors and his observation of the various stages of magnetic trance in the somnambule, as well as of the somnambule's responses to the operator without any physical contact, led him to conclude that the physiological theories of Heidenhain, Bubnov and others were not adequate to explain these phenomena.[2] He maintained that a trance could be accounted for only in psychological terms, no matter whether it were a deep trance, producing striking instances of clairvoyance and mediumship, or a light trance, often self-induced,[3] and responsible for phenomena such as thought-transference, or reading sealed letters (*Rebus*, 1883, No. 6, p. 57).

In two further articles on the subject of hypnotism, entitled " Peregorodochnaya Filosofia i Nauka " [Philosophy and science within partitions] Wagner replied to the arguments of the so-called positivists, who rejected the reality of paranormal phenomena, by introducing a parallel between the apparently irrational concepts of time and space of higher mathematics (N. I. Lobachevski, K. F. Gauss, B. Riemann) on one hand and concepts such as clairvoyance and mental suggestion on the other. It was precisely such concepts, he wrote, so unacceptable to certain scientists, that could be regarded as a proof that matter and space had aspects others than those hitherto explored by physics[4] (*Rebus*, 1883, No. 42, 43 ; pp. 278-381, 387-389).

[1] Quite unlike Professor Tarkhanov (see p. 85) who considered that the so-called higher phenomena were not scientific facts and therefore of no interest to a serious scientist.

[2] Cf. Wagner's article on thought-transference (see p. 25).

[3] Cf. the case of Dr. Khovrin's subject above.

[4] In view of the fact that Wagner wrote these words fifteen years before the discovery of radium, twenty-five years before the theory of relativity and even before Niels Bohr was born, we can give him credit for a certain amount of scientific insight.

On 13 February 1889, Wagner delivered before the Medical Association in St. Petersburg a lengthy paper under the title : " On Psychic Phenomena during Hypnosis " (19) from which we shall quote a few characteristic passages contributing some original elements to the subject under discussion.

The problem of hypnotism (or animal magnetism, as it was called before Braid) can be reduced, according to Wagner, to the problem of will. " The whole complex of mechanical, muscular and psychological apparatus of the subject is subordinated to the will of his hypnotizer, owing to which certain writers, like Duval, had called the hypnotic state ' a functional beheading '." This, however, he thought was not quite the case since the interesting aspect of hypnosis lay in the fact that one part of the subject's personality could be subordinated while another could not. " In my practice I came across such cases," Wagner related. " One was a young man of seventeen, who as a rule easily fell into hypnotic sleep and always meekly fulfilled all orders and mental suggestions, until once, suddenly, he became strongly antagonistic while in a genuine somnambulistic condition, with closed eyes, etc. ; he went against my orders into another room, walked up and down in complete darkness and mumbled vigorously threats and curses. Even more striking was the case of my somnambule, Countess S., who was also easily hypnotized. To all my commands, no matter how authoritative, she reacted on certain occasions with unswerving insubordination. When I told her, ' I want you to do this and this,' she answered, ' And I don't want to ! ' This was in a deep hypnotic state, with well developed anaesthesia, etc. She then talked with a different voice, moved in a different manner, in one word, there appeared before me a quite different personality."

" There are many similar instances," Wagner continued, " and therefore we *cannot* compare the hypnotized person with a decerebrated animal. His will is not a *tabula rasa* on which the hypnotizer can write what he pleases. This again may serve as an argument against the physiological theory."

Still more striking were those cases of somnambulism where the phenomena of clairvoyance made their appearance. Wagner quoted the case of the German Seeress of Prevorst, Frau Hauffe, but added that such cases were scarce and that, although a high percentage of people were responsive to hypnosis, only a very few of them were likely to exhibit clairvoyance.

" When Hansen was here," he stated, " I organized with him

at my house five private séances during which fourteen people were asked to serve as subjects. Out of this number Hansen was only able to hypnotize four, and only one demonstrated undoubtedly clairvoyant phenomena, namely the young man mentioned before : and he was already trained by me in somnambulistic experiments. During one of the séances, after Hansen had hypnotized him, I made a drawing on a piece of paper, rolled it up tightly and placed it against his head, with a command to say what was on it. The subject sat for a while without moving, then said, ' I can't say, I don't see '. Then I put the piece of paper with the drawing against his body, in the epigastric area, and after two or three seconds he said, without hesitation, ' It's a cross '. ' What kind of a cross ? ' I asked. ' A long cross,' he answered. Then I unrolled the paper, in front of twenty witnesses, and it showed a drawing of an elongated cross."

" To obtain the phenomena of clairvoyance it is necessary to leave aside the physiological aspects of hypnosis : we should not provoke anaesthesia, hyperaesthesia, lethargy, automatism, etc. To obtain ' psychological hypnosis ' the experimenter should act psychologically, with the will, fixing the subject with his eyes or using mental suggestion until the subject gets into a somnambulistic state. Then he should make the subject talk and define clearly his condition. But one should remember that this does not succeed easily or in a short time."

Wagner emphasized the fact that physiological and psychological aspects of the hypnotic condition were known to be, as he expressed it, " antagonistic to each other, or an actual impediment ", and this mainly because physiological or " animal hypnosis " could produce total subjection, a paralysis of the subject's will, an atrophy of his psychic activities which seemed to play an essential role in the phenomena of clairvoyance. " We all agree," he added, " that psychological hypnosis offers much which is obscure in comparison with the physiological. The latter can be reduced to physicochemical or mechanical processes, whereas the phenomena of psychological hypnosis are far more complex."

One of these phenomena was mental suggestion, of which very little had been known until the recent experiments of Dr. Ochorowicz, who was the first to distinguish the aideic state from the polyideic and monoideic and described them in detail. This area is closely related to thought-reading and thought-transference, mental suggestion being a form of thought-transference.

"From my own experiments," Wagner went on, "I can conclude that :

1. the action of one mind on another exists ;
2. that it becomes stronger if conducted at the same time by several inductors ;
3. that in such experiments the subject is always under hypnosis even if so light that it is unnoticeable, a fact I had clearly observed in my own experiments
4. that, in developing the physiological hypnotic condition we reduce or destroy the few sources of those rare phenomena occurring during the psychological hypnotic sleep, phenomena which, even if scarce, are still to be found among us."

After the death of Butlerov, Wagner may be considered as the leading man in scientific circles to carry on serious research on hypnotism and related phenomena. At the Eighth Congress of Russian Doctors and Epistemologists (25 February 1890) he was invited to read a paper " Vzgliad Fiziologii i Psikhologii na yavlenia gipnotizma " [Physiological and psychological approach to hypnotic phenomena]. This paper, however, covered practically the same ground as the former paper and therefore need not be discussed here.[1]

Wagner was also one of the founder members of the Russian Society for Experimental Psychology, established in St. Petersburg on 26 February 1891. At the very first meeting of that Society the controversy over the apparently numerous cases of thought-transference was discussed, together with the question of the nature of the contact that existed between the magnetizer (hypnotizer) and his subject while the latter was in trance. Three commissions were formed to study (1) thought-transference, (2) hypnotism and clairvoyance (3) deep trance and mediumistic phenomena. The sittings were scheduled to take place every second week and serious experimentation was recommended.

Another member of the same group of physiologists and psychologists who also was active in research on hypnotism, but at the opposite pole from Wagner in his basic approach, was Ivan R. Tarkhanov, Professor of Physiology and member of the Imperial Academy of Medicine in St. Petersburg. Like Wagner and Butlerov, he devoted much energy to spreading among the Russian public the understanding of magnetic and hypnotic phenomena, but

[1] It might be of interest to compare Wagner's standpoint with that of Myers and Gurney in England. There seems to be no doubt that Wagner followed closely the work of the London Society for Psychical Research and might have been influenced by them or at any rate indebted to its members.

unlike both of them, he maintained a strictly physiological position and tried to explain hypnotism by studying the physiology of the cortex. He made a series of interesting experiments in slowing down of the pulse and demonstrating a direct correspondence between the cortex and the functioning of internal organs. However, probably following the Salpêtrière school, Tarkhanov came to the erroneous conclusion that hypnosis was nothing other than a temporary psychosis.

Owing to his strictly physiological orientation, Tarkhanov is considered even today by contemporary Soviet researchers as an eminent scientist (20) and quoted as an authority (21), while during his own time his work was widely known not only in Russia but also abroad. Consequently, and in spite of the fact that Tarkhanov flatly denied even a possibility of paranormal phenomena in connection with hypnotism (or otherwise), it may be of interest to give a short summary of his book "Hypnotism, Suggestion and Thought-Reading" (7) which appeared a few years later in a French translation (1 éd. 1891, 2 éd. 1893) and which claims to provide some original contributions. This book has four chapters, headed : Introduction, Hypnotism, Suggestion and Thought-reading.

In the Introduction Tarkhanov gave the reader a general outline of his scientific position, saying that the book was a fragment of his public lectures " On the errors of human knowledge ". The theory of hypnosis he intended to present had already been put forward by Professor R. Heidenhain, not in his best known book *Der sogennante thierische Magnetismus* (Leipzig, 1880), but in journals, and Tarkhanov claimed merely to develop this hypothesis and make some slight additions to it. However, regarding the phenomena of suggestion, the explanations that he offered were, as far as he knew, the first attempt in this field. He said that with regard to thought-reading, his theory was not new but only confirmed by facts[1] the theory advanced several years previously that it was not thought-reading, but the reading of muscular movements which accompanied so-called " motor-ideas ".

In the section on hypnotism, Tarkhanov stated that in the nervous centres in general and cerebral centres in particular there took place two kinds of parallel phenomena, stimulation and inhibition, which remained in a constant, mutual relation, producing the normal flow of nervous activity. The abolition of all weak stimuli coming from outside produced a weakening of the inhibitive

[1] By " facts " the author clearly meant his own experiments described in the following pages.

activity of the nervous centres and consequently an increase of the excitability within the system.

What mechanism was then responsible for the development of the hypnotic condition? All means employed to bring a person under hypnosis tended to make him concentrate on some monotonous impression on the sense organs (hearing, sight, etc.). Gradually, owing to the growing fatigue of the sense organ involved, this impression became extinct and what followed was, if one could use such an expression, a state of psychological obscurity. Then, due to the interruption of the stream of external stimuli, the consciousness became extinguished and consequently the will, a psychological function, also disappeared. This produced the immobility of hypnotized subjects and the total absence of voluntary acts.

In the chapter on suggestion, Tarkhanov said that this phenomenon took place when certain words, pronounced distinctly and addressed to a hypnotized subject, inspired him with the idea of an action, to be executed precisely at a given time and place, which the subject performed without hesitation, regardless of all obstacles and any inner resistance. Why, asked Tarkhanov, did this phenomenon take place? He thought that it must be remembered that sensations and representations (images) produced during hypnosis were distinguished by their intensity and clarity. Consequently, the suggested ideas, which also consisted of a series of representations, must have a singular power over the nervous system of the subject. What, however, made the phenomena of suggestion unusually interesting was, on one hand, that the suggested orders were performed when the subject was in full possession of his intellectual faculties and, on the other hand, that they were performed exactly at the suggested time. He concluded that the causes determining the fulfilment of the suggested idea at a given time were to be found not in the inner mechanism of the nervous centres but in the stimulus provided by the conditions that had become intimately associated with the suggested idea.

Professor Tarkhanov, unlike many contemporary Russian research workers in hypnotism, flatly declared his opposition to the view that hypnosis and suggestion had many practical and valuable uses. He said that the elimination of the consciousness and of the will which characterized hypnosis could lead to the loss of self-control, to an increased excitability and to hysterical attacks. According to him, it was certain that hypnosis, which in fact offered a picture of temporary alienation, provoked in certain people subsequent nervous disorders interfering with their normal functioning.

He thought that hypnosis was in reality a pathological state which, even if temporary, left traces of varying intensity in the nervous system. Several psychiatrists of his acquaintance in St. Petersburg had among their patients hysterical cases whose illnesses had developed after a few hypnotic sessions.[1] And in one case, after repeated hypnosis, they had observed the first symptoms of mental illness.

In his chapter on thought-reading Tarkhanov said that he intended to prove that these phenomena were based on unconscious self-deception. They had been discovered not by any scientist, but by a young half-educated American, Mr. J. R. Brown,[2] who in 1874 had appeared in New York at a public séance and, owing to the novelty of his experiments, had succeeded in attracting the attention not only of the audience but also of the press. The procedure had been for the operator (also called the inductor) to apply his palm to Brown's head, thereby apparently enabling the latter to tell which person or what object the inductor was thinking of.

Brown started his experiments in July 1874, and already by October an American neuropathologist, Dr. G. M. Beard, had explained these phenomena scientifically, proving that " all this thought-reading is based on the unconscious movements of the muscles " and consequently called it " muscle-reading ". Beard arrived at his theory after having experimented with some 100 people who, after previous practice, were also able to " read " thoughts at a public séance. On the other hand, there also appeared all sorts of fantastic explanations, as for instance that a man's thought could act at a distance through radiation, or that the will of one man could enslave the will of another so that he would execute everything he was told to, or that there existed a magnetic action from one man's brain to another. Although such explanations were of a most chimerical nature, nevertheless they had made a greater appeal to the public than Beard's theory had done.

[1] Cf. the case of Dr. Khovrin's patient, p. 35.

[2] This refers to Mr. J. Randall Brown whose " thought-reading " act preceded that of Mr. Stuart Cumberland who learned the method from Washington Irving Bishop. In 1875 at a meeting in Philadelphia it was stated that Brown and Whitehouse were the originators of so-called " muscle-reading ". The early history of muscle-reading was discussed by Dr. G. M. Beard in his book *The study of trance, muscle-reading and allied nervous phenomena in Europe and America* . . . (New York, 1882), and he dealt also with Bishop's performance. For a note on Brown, see H. M. Lyman " Notes of an interview with Brown, the ' mind-reader ' " (*Chicago Med. Journal*, 1873, XXX, pp. 505 ff.).

Seven years later there appeared in England another experimenter, Mr. W. I. Bishop, who was able to perform various forms of Brown's thought-reading. At the initiative of Carpenter the English scientists began to study these phenomena and reached the same conclusion as Beard, seven years earlier, namely that they were due to involuntary muscular guidance. The appearance of Bishop in Russia started a controversy about the phenomena in question but the majority of the press as well as most scientists took a rational attitude towards this " mystery " and, even though unacquainted with the work of Beard or of the English Commission (Croom Robertson, F. Galton, E. R. Lankester and G. J. Romanes), arrived at the same conclusion, namely that " muscular movements are read, not thoughts ". Professor J. A. Sikorski published an article on this subject explaining how he himself had learned a certain technique of " thought-reading ", and a similar theory was put forward by a German scientist, W. Preyer.[1] Unfortunately, no one had yet shown these unconscious movements in graphical form and this was probably the reason why the " muscle-theory " was still not universally accepted. Tarkhanov proposed to fill in this gap and offered an explanation of the physiological mechanism involved, which, however, need not be discussed here.

Tarkhanov argued that it had to be admitted that a thought-reader was guided by external manifestations of the psychological activity of his inductor (operator), signs of which the latter was not conscious. He gave instances of involuntary muscular movements, quoting Carpenter's definition of " motor-ideas ", which produced physiological effects such as tears or blushing. He then proceeded to describe his own experiments, illustrated by graphs. In one of these the subject was told to *imagine* his finger moving to the right ; at the same moment his finger did in fact move to the right (as was shown on the graph) even though he was neither willing nor conscious of it. Similar effects were observed when he was imagining a movement of his finger to the left, or up, or down. In another experiment the subject was told to hold a pencil and to imagine a number or a letter. In most cases he would write it unconsciously. According to Tarkhanov, these experiments proved beyond doubt that imagining a certain movement was enough to provoke it, without the subject being in the least aware of it.

Tarkhanov stated that since the majority of people thought by means of verbal images (i.e. words) which were accompanied, to a greater or less extent, by unconscious movements of the mouth and

[1] In *Die Erklärung des Gedankenlesens* (Leipzig, 1886).

tongue, it was natural that from those movements one could guess the thoughts from which they originated. Owing to these " motor-ideas ", the thought-reader did not lack external signals and he remained, by means of this " dumb language ", in communication with his inductor. " Muscle-reading " naturally required practice and a great concentration of attention, which was responsible for the fact that the thought-reader felt fatigue, neuralgia or other symptoms. Sometimes it might produce an acute cutaneous sensitivity and throw the subject into a state similar to the early stages of hypnosis, while in certain subjects the effects might even be convulsions or loss of consciousness. In any case, the problems solved by thought-readers were limited and they were unable to " read " abstract concepts, such as " the sun is hot ", because such concepts did not cause muscular movements.

Tarkhanov admitted, however, that sometimes, even if seldom, the thought-reader did succeed in reading an abstract thought and that in such cases he was simply guided by involuntary and hardly perceptible movements of the lips, or by whispering.[1] The guessing of melodies could occur only when the inductor was himself musical as otherwise he would not be able to guide his subject adequately. The audience, also, by whispering and by their reactions to the subject's movements, might exercise on him a certain guiding influence. As a final proof of the theory he advocated, Tarkhanov described another of his experiments, this time with the non-professional thought-reader M. E. The subject's ears were stopped and his eyes blindfolded. His left hand was in touch with his inductor, while with his right hand he was supposed to find a certain object. It was demonstrated that the inductor made involuntary movements, which were electrically recorded, which the subject felt in his left hand. A series of such experiments all gave similar results.

[1] The controversy on the possibility of unconscious whispering by the agent in experiments in thought-transmission was enlivened by the publication in the *Philosophische Studien* (Wundt) in 1895 (XI, pp. 471-530) of a paper by A. Lehmann and F. C. C. Hansen on the subject in which the two Danish authors criticized the experiments with Mr. G. A. Smith in the *Proceedings* (1889) of the British Society for Psychical Research. It is now known that Smith was almost certainly a fraudulent performer, but Professor Sidgwick in dealing with Lehmann and Hansen discussed only the whispering theory, as both he and Mrs. Sidgwick apparently had faith in Smith's integrity.

Later discussion of the subject will be found in the *Psychological Review* (1913, XXII, pp. 129-153), where R. Pintner deals with inner speech during silent reading ; *Journal of Experimental Psychology* (1916, I, pp. 365-392), where a paper by H. B. Reed deals with the same subject, a theme also mentioned in the *Journal of Experimental Psychology* in 1925 (VIII, pp. 1-32).

Tarkhanov concluded this chapter with a mention of the problem of thought-reading at a distance, the occurrence of which he did not accept. According to him, the experiments of Richet were not above criticism and he quoted Preyer's opinion that the difference between the positive and negative cases was due mainly to chance coincidence. He also stated that there were known cases among thought-readers of persons with excessively developed hearing (as among the blind), or with an acute sensitivity to smells (as among primitive people), or with such remarkable cutaneous excitability that they could feel very slight movements of air around them. All these factors were responsible for the phenomena of thought-reading.

The author ended with the following statement : " No, human thought is a secret from other men ; it is not manifested outside and there are no means of guessing it when it wants to remain hidden. This is a most important human prerogative which protects our inner liberty."

In evaluating Tarkhanov's contribution in the light of present-day knowledge, with incomparably more experimental material at our disposal, we cannot but observe that his attitude was not as open-minded and liberal as one might expect from such an eminent scientist. After he had decided that physiology alone could supply the key to the understanding of hypnotic phenomena and that thought-reading as such did not exist, he was not willing to consider any evidence to the contrary. His own argument frequently seems unconvincing and, by comparison, it might be thought that the more rational attitude was that of Professor Butlerov, who believed that thought-reading lent itself to various interpretations according to each case observed ; it might be due to Cumberlandism, to " unconscious cerebration ", or even to direct thought-transference, many cases of which had been recorded by observers thought trustworthy by Butlerov, but possibly not by Tarkhanov.

Instead of further comments on Tarkhanov's attitude it may be appropriate here to quote a brief report by Dr. A. M. Shiltov, member of the British Society for Psychical Research and professor at the University of Kharkov. In his account (*Rebus*, 1885, No. 4, p. 45), Shiltov stated that in view of the wide interest in thought-transference he wished to quote one of his experiments. To be free of any charge of Cumberlandism he conducted these experiments at a distance from his subjects. All experiments were successful, with some subjects in the hypnotic sleep, and some not. There were forty experiments, with four men and two women. In one

experiment, on 30 October 1884, a Mr. V. was in Shiltov's house drinking tea with the ladies in the dining-room and Shiltov decided to experiment on him from the study, at a distance of fifty feet, two rooms away. Mr. V. was sitting at the table, unable to see Shiltov and not suspecting that he was the subject of an experiment. Shiltov willed him to go to the study.

Ten minutes after the experiment began, Shiltov's wife, who served as his assistant, noticed that Mr. V.'s right hand, holding a cigarette, was shaking. He put down the cigarette, as if he did not want to smoke, he had a tremor in his legs and complained of heaviness in his head and said, " Certainly Dr. Shiltov is experimenting with me ". Shiltov's wife assured him that this was not the case. Mr. V. made visible efforts not to fall asleep in front of the ladies, but twenty minutes after the start of the experiment he closed his eyes, five minutes later he was asleep and five minutes after that Shiltov found him in the study, deeply asleep and in a cataleptic state, with full anaesthesia. When he was awakened, he remembered nothing and was surprised to find himself with Shiltov.

Shiltov said his experiments proved the possibility of action by one man on another without using any external sensations or other means, but that it must not be forgotten that such cases, when the subject performed given orders automatically, were due to the transfer of thought into the unconscious of another man. It was precisely in this fact that the importance of the experiments lay, in that more might be learned about the unconscious.[1]

Hypnotism in Medicine and Sociology

As has already been mentioned, the attitude of the Russian scientific and particularly medical circles towards the phenomena of animal magnetism or hypnotism was more rationalistic and laid more emphasis on the physiological aspect than was the case in the West. At the time when in England and France hypnotism was being openly discussed and experiments conducted by such men as Edmund Gurney and F. W. H. Myers, or by groups of medical men of the Salpêtrière and Nancy schools, an overwhelming majority of conventional Russian physicians were careful not to be associated with such matters, or, if they were compelled to be associated with

[1] Another account of this test was published in the *Journal* of the British Society for Psychical Research, 1885, I, p. 274. It is to be noted that no mention is made in this account of the word " unconscious ".

them, then only with a sceptical approach towards hypnotism in general and a total rejection of the so-called higher phenomena in particular.

Under the influence of the West, however, and especially of the British Society for Psychical Research, this attitude during the decade 1880 to 1890 underwent a gradual change, which may be illustrated from several reports selected chronologically from the pages of *Rebus*, during the years 1887-1888.

" We read with satisfaction in *Novosti* [News] No. 65, that at last hypnotism in Russia is coming into practical use, although with some secrecy. Only a year ago, after a certain physician had mentioned the fact in public that he had witnessed a spectacular cure by the magnetizer Feldman, he was ostracized by all his colleagues. Yet at the present time, Dr. N., using the same method in a well-known St. Petersburg hospital, has cured an hysterical patient from a long illness. Our representative, however, was asked not to mention either the name of the doctor or the hospital " (1887, No. 13, p. 147).

" In the protocol of a recent meeting of the Psychiatric Society of St. Petersburg is a report by Dr. Zagorski of a successful treatment by magnetism of a case of insomnia that had not responded to any other method. At first passes were applied and then the use of magnetized water. On one occasion, when in a hurry, he forgot to magnetize the water and his patient did not fall asleep. On subsequent occasions, when he repeated it for experimental purposes, his patient always knew when the water was *not* magnetized and she always knew in advance when the doctor intended to come. Another of Zagorski's patients guessed that it was intended to treat him with magnetism and that the physician's little son was ill, although no such information could have reached him in either case by normal means " (1887, No. 29, p. 291).

" At the second annual meeting of the Russian Medical Association in St. Petersburg, Dr. S. P. Botkin gave demonstrations with an eleven-years-old girl . . . and he stated that in his opinion his subject could be brought into a state of clairvoyance " (1888, No. 11, p. 113).

It is clear from the above that during the late 1880s a basic change was taking place in the attitude of Russian medical circles, not only towards hypnotism but also to the so-called higher phenomena. Even if the number of physicians who admitted the existence of these phenomena was rather insignificant, the mention of clairvoyance no longer produced such unfavourable reactions. A decisive change, however, occurred only after the publication of Khovrin's report on Miss M. in Tambov. Even before the case appeared in print it received wide publicity and was commented upon by L. G. Korchagin in an article " Perviy nauchniy opit

yasnovidenia v Rossii" [First scientific experiments with clairvoyance in Russia] (*Rebus*, 1898, No. 2, p. 13), in which the author reports on successful experiments carried out with the clairvoyant by the Society for Experimental Psychology in St. Petersburg. Henceforth, phenomena which might be attributed to clairvoyance became the subject of interest to certain medical circles who were able openly to discuss the problems without the odium of being accused of superstition or credulity. An instance of this new attitude towards the question is a paper delivered by Professor E. Belin from Kharkov at a meeting of the Society for Experimental Psychology in St. Petersburg under the title "O Yasnovidenii i Gipnoze" [Clairvoyance and Hypnosis] (*Rebus*, 1898, Nos. 3 and 4, pp. 25-26, 37).

Here the author described in detail a case of a young governess from a respectable family, Martha E., who was brought to him after having been arrested for theft while, as was later proved, under the influence of hypnotic suggestion. The suggestion to steal had been given her by a young man of her acquaintance, who subsequently admitted this and explained that it was only for the purpose of experiment. Since the subject was in a highly hysterical condition she was placed under the medical supervision of Belin by the court and henceforth he kept her by him for further observations. It was soon established that under hypnosis hyperaesthesia of one or other side of her body could be produced. For example, when the word "Martha" was traced in plain water on her arm and she was told it was *collodium vesicans* the word immediately appeared on her skin in red, actually forming blisters. The patient was later transferred to the medical clinic, where she exhibited clairvoyance, such as reading sealed texts and guessing when Dr. Belin was coming before she could either see or hear him. She was also able to repeat conversations which had taken place between doctors or members of the staff five or six rooms distant from where she was and this phenomenon was repeated daily. She was particularly sensitive to the presence of a magnet and would wake up the moment a magnet was brought into the room, saying that it caused her pain and she wanted it thrown away. Belin reported that transference of sensation could easily be achieved with her.

In the second part of his paper, Belin reported further experiments with Martha which illustrated her extreme hyperaesthesia, especially on the left side. If he raised his hand, even from a distance of two yards, this was enough to produce cramps and convulsions in the subject's left arm and, even if her eyes were closed, she would

react by screaming on account of the pain she suffered. She was able to read the smallest print on the reverse side of a sheet of paper and was able to read scripts in a sealed envelope, even when written in pencil, although not through six layers of paper, which proved that there was a limit to her faculty in this direction. In these cases the experimenters did not know beforehand the contents of the envelopes. According to Belin, his subject was a typical case of the epileptic type of hysteria, which he thought explained her clairvoyant abilities, which disappeared immediately she was cured of her affliction.

The last part of Belin's paper was concerned with his experiments on hypnotism in animals, following Dr. Danilevski's researches (22). Belin considered that a strong analogy existed between human and animal hypnotism and regarded all phenomena, including clairvoyance, as purely physiological, while the hypnotic state itself could be obtained only with subjects who were both hysterical or morbidly nervous.[1]

During the discussion which followed, Wagner, together with other members of the Society, disagreed with the physiological standpoint of the speakers. The recent experiments which had been carried out by the Society with Khovrin's subject seemed to them to require a different interpretation, but Belin remained unconvinced and declared that the experiments carried out by the Society were not conclusive, owing to insufficient controls (*Rebus*, 1898, No. 18, p. 159).

Belin's attitude was highly characteristic and the more the opinions of Russian medical circles are studied, the more their deep-rooted physiological orientation becomes apparent. It remained almost unaffected by such dissenters as Wagner and Butlerov, who associated themselves with Aksakov, whose reputation was naturally very low on account of his lack of critical faculty and his extreme credulity in occult matters. Nevertheless, hypnotism and its related phenomena were becoming more widely studied during the 1880s and even at the beginning of that decade there were a few physicians who did not object to having their names associated with what was considered somewhat dubious research and to having their experiments reported in various journals. Thus, Dr. V. I. Drozdov, who was a professor at the Medical Academy of St. Petersburg, published a paper on self-induced hypnosis (23). One of the cases described in this article is of some

[1] Although this view has been held in many quarters, the evidence that we possess does little or nothing to support it.

interest, since it concerned a lady of 24 who, after having attended two séances with the magnetizer Hansen developed spontaneous attacks of hypnotic sleep and failed to respond to the methods then commonly employed for awakening subjects. In his account of the case, Drozdov stated that she was able to give verbatim reports of conversations carried out at a considerable distance from her and stated that it amused her to hear the physicians arguing about her condition in the adjoining room.

A close collaborator of Professor Drozdov was Dr. N. I. Grigorev who was closely concerned with a study of metalloscopy and metallotherapy (24), and wrote an exhaustive work on this subject. In Russia metallotherapy seems to have been well established in folk-medicine and to a very minor degree was related to experiments in animal magnetism. In his book Grigorev gives a short history of metallotherapy, mentioning the importance that the magnet played in the early days of Mesmer's activities. He said that the majority of experiments in Russia on metallotherapy had been closely connected with the treatment of hysterical subjects and in the use of both magnets and ordinary metals suggestion had played a prominent role. The physicians themselves were not immune to this belief. F. P. Botkin had actually reported that, after having hurt his hand he had recurrent pain in it every evening until he finally discovered that the pain was due to a magnet in the drawer of his desk where he used to write at night. The magnet having been removed, the pain disappeared.

Summing up of his general attitude regarding metallotherapy, Grigorev seems to have glimpsed the truth regarding the role that suggestion played in the cure. " No matter how we try to make the phenomena of metallotherapy dependent on metals alone," he writes, " there are facts indicating that the psychological condition of the patient and his concentration on the symptoms under treatment (' expectancy ') can exert a direct influence on the final results." Following Grigorev's book there appeared some years later in *Vrach* (25) a paper by L. R. Kobylianski reporting a series of his own experiments which added little to what had been previously described and is of interest mainly because it was almost the last contribution of any importance to the subject of metallotherapy.

Although metallotherapy had almost disappeared among serious research workers in Russia, hypnotism and mental suggestion became increasingly studied, possibly because of the work then being done on those subjects in France. In Russia, the social significance of these phenomena was stressed, since Russian scientific men had

always been particularly concerned with this aspect of their work. A large number of essays and articles began to appear in which the social repercussions of hypnotism and mental suggestion began to be discussed. Of these, we shall examine two representative examples, namely those by N. Bazhenov (1857-1923) (26) and V. M. Bekhterev (27).

On 27 January 1891, Bazhenov delivered a lengthy paper before the Moscow Psychological Society which was entitled " Mental suggestion : its scope and limitations ". At the very beginning of his paper he emphasized the importance of the subject, stating that the previous ten years had been marked by rich achievements in various fields and that one of the most significant was the interest aroused in the phenomena of hypnotism, mental suggestion and other related manifestations. He then gave a historical outline of hypnotism, stressing the role played by James Braid, and proceeded to evaluate the phenomena of suggestion from the rationalistic point of view. He pointed out that the opinion existed that mental suggestion was a peculiar phenomenon, produced only under hypnosis and with many features which, if not actually miraculous, were at any rate amazing and mysterious and were not explicable by analogy with normal psychological conditions. Bazhenov considered this view to be a harmful error and he maintained that the phenomena of mental suggestion were neither rare nor exceptional and that the study of them provided the key to many obscure psychological and sociological problems.

Following G. W. Leibnitz and E. de Condillac, Bazhenov held that what occurs within us without our conscious knowledge was most significant for the understanding of our conscious processes ; and, to support this opinion, he quoted W. B. Carpenter's theory of " unconscious cerebration " and Sechenov's theory of conscious and unconscious reflexes which constitute mental activity. In Bazhenov's opinion, even in normal life we all function, as it were, with a divided consciousness and a double personality, a condition which he terms psychic automatism and in which one part performs actions automatically, while consciousness may be otherwise employed. Every normal person, in his view, performs many functions in the same manner as does a person in the hypnotic sleep.

In order to explain the hypnotic condition, Bazhenov mentioned various theories, some contradicting each other and leaving unexplained what to him was the most significant fact, namely the changes in the functions of memory in the somnambulist state. In

this connexion he quoted some well-known cases of double personality, such as that of Félida X. studied by E. Azam in Bordeaux from 1858 onwards, and also of amnesia. He thought that amnesia had a close analogy with somnambulism in that a contraction of consciousness was observed, as if the person were existing only with a part of his normal ego and with consecutive fluctuations of memory. According to Bazhenov, the main characteristic of somnambulism, in popular opinion, was suggestibility, that is to say an unconditional subjection of the hypnotized person to the will of the operator. This view, he maintained, was not accurate, for not only was the suggestibility of any subject under hypnosis limited, but it varied from person to person and sometimes was entirely absent. Also, suggestibility was a widespread psycho-physiological phenomenon, which could occur quite independently of hypnotic and somnambulistic states. It was common knowledge among hypnotists that some people were better subjects than others and that even those who were easily hypnotized refused those suggestions in conflict with their basic personality traits, even developing convulsions rather than follow an order contrary to these. He also dealt with the psychology of crowds, comparing the behaviour of persons swayed by orators or prophets with that of those under the influence of magnetizers.

Although Bazhenov was a respected psychiatrist and sociologist of his time, he was in no way comparable with Bekhterev (1857-1927) whose scientific importance rests mainly on his work on the associated reflex and who later exercised a decisive influence on future research on hypnotism in Russia. These later activities, however, took place after the close of the nineteenth century and therefore do not concern us in this volume. Bekhterev's interest in hypnotism was focussed on the problem as to how hypnotic states could be used in his research on reflexes and how it might be applied to therapy in general and especially in the treatment of alcoholism. On the other hand, Bekhterev, who was a man with a very active social conscience, was not indifferent to those aspects of suggestion which affected the collective life of the community and indeed to this question he devoted one of his major works (27).

In the first part of the book Bekhterev, who vigorously opposed the theories of Charcot and his followers in Russia, discussed the relation of hypnosis to suggestibility, emphasizing his belief that there was nothing morbid or harmful in the hypnotic state in so far as it represented only a variation of normal sleep. On the other hand, it created conditions where the activity of the ego was more

or less suspended and thus it was that suggestion was able to penetrate directly into the deeper strata of the psyche, a region which, according to Bekhterev, should be more appropriately called " common consciousness " rather than the unconscious or the subconscious.[1] Precisely on account of this factor of " common consciousness " Behkterev believed that suggestion was of incalculable importance in social life, a fact which, he thought, had been abundantly illustrated by past as well as by contemporary events, such as the hysterical epidemics in the Middle Ages and such phenomena as those observed in the cemetery at St. Médard[2] in the 1730s, in the Benedictine convent in Madrid from 1628 to 1631[3] and in other cases of possession. Events of the same kind had been observed in Russia and have been described by various authors.

Another author who stressed the physiological aspects of hypnotic phenomena was Dr. M. B. Pogorelski (5), who in 1898 published an extensive study of animal magnetism based on physiology and physics and made a serious, although far from convincing, effort to describe all the higher phenomena in terms of a theory of radiation which at that time was more and more coming under scientific scrutiny. Although Pogorelski's arguments were not supported by adequate laboratory experiments and thus have not acquired the scientific value that otherwise they might perhaps have had, they are important as an indication of the prevailing attitude not only among Russian scientific men but also among the educated public.

Pogorelski's approach to animal magnetism was really quite a new one. We have seen that in the past there were a few believers like Aksakov who appeared to accept all the higher phenomena at their face value. Then there was the more moderate group, represented by such persons as Butlerov and Wagner, who did not reject even the most baffling phenomena but tried to explain them rationally by psychological and physiological factors which they supposed to be operating. Then there were men like Tarkhanov, who was a radical positivist and for whom facts only existed as such when they fitted into a strictly physiological framework. Pogorelski,

[1] Bekhterev's concept has nothing in common with C. G. Jung's " collective unconscious ".

[2] See P. F. Mathieu's *Histoire des miraculés et des convulsionnaires de Saint-Médard* (Paris, 1864) and cf. E. J. Dingwall's *Some Human Oddities* (Chap. 4 [New Ed.], New Hyde Park, New York, 1962).

[3] See J. A. Llorente's *Histoire critique de l'inquisition d'España* (2 éd., 4 vols., Paris, 1818), and cf. L. F. Calmeil's *De la folie* (2 vols., Paris, 1845, Vol. II, pp. 1 ff.).

however, was in quite another class. He accepted the objective reality of all the higher phenomena, not only those more commonly reported, such as clairvoyance, but even the phenomena of the séance room, such as materializations. At the same time he emphatically rejected not only the spirit hypothesis but even psychological explanations and believed that all such happenings could be fully explained by physics and biology.

According to this writer, the crucial point of the whole problem was whether animal magnetism existed as a separate type of energy, or perhaps as a specific force which was able to act on surrounding bodies, or whether, on the other hand, the phenomena were due to fraud, credulity, faith, suggestion or auto-suggestion. He believed in the reality of animal magnetism and considered it beyond doubt, since he thought that anybody could prove it to himself by magnetizing men, children and animals through methods which had been used from remote antiquity.

His own research in this subject covered a wide and varied range. For example, he devoted an entire chapter to experiments on thought-transference and psychometry. He maintained that many of his subjects, under strict laboratory conditions, were able to produce phenomena similar to those recorded by other observers. Less common, but equally successful, were his experiments in the exteriorization of sensitivity. For example, one of the subjects, a student, Mr. L. F., was told, while in the hypnotic state, that his sensitivity was localized in a glass of water which he could not see, but nevertheless every time that the surface of the water was touched with a knife he reacted as if he felt sharp pain. Other experiments illustrated what suggests the lack of scientific caution which Pogorelski brought to his tests. For example, he stated that in experiments when the subjects were supposed to feel a pin prick at a distance, they were hardly ever capable of localizing the feeling exactly. If, for instance, the imaginary pricking was performed even at a distance of 5 to 6 cm. from the body, they replied that they felt it on the right hand, or on the left hand, or even on the face. In the case of his most sensitive subject, the 19-year-old student, Mr. L. F., whose powers he had demonstrated several times to medical colleagues, these mistakes were often made and he would say that Pogorelski had pricked his little finger when in fact the pricking was aimed at the thumb, or when it was aimed at his nose he would say it was his forehead. Pogorelski added that in all these experiments his eyes were closed and he was unable to see anything, being in a hypnotic trance during the tests.

Another experiment consisted in giving the subject a nail or other iron object to hold, which was then hidden in another room by some of the observers, among whom the experimenter was not included. The subject then was brought into the room and, after turning around a few times, moved towards the right spot, his hands reaching directly for the hidden object. According to Pogorelski he did this with striking precision and under conditions where the possibility of fraud was excluded.[1]

Among his other investigations, Pogorelski devoted some time to luminous phenomena which, he maintained, had close connections with apparitions of various kinds. For example, his subject Mr. L. F. affirmed, when in the magnetic state, that he saw him with a strong light around his head, a fact which he mentioned after the session. Pogorelski apparently believed the story and promptly invented and constructed two pieces of apparatus, one of which he called the " energophore " and the other the " phosphenophore " which, according to him, permitted the emanations of energy from the human body to be seen, and he published pictures of luminous radiations issuing from the hands of the experimenter.

The principle of Pogorelski's energophore (the phosphenophore was merely a battery of energophores) was very simple, since from the description given it was only a kind of induction coil. A length of ordinary copper wire was twisted into a spiral and then both ends were put through pieces of cork, which were affixed to test tubes. These were filled with distilled or slightly acid water. Before a sitting, which had to be held in complete darkness, the tubes were filled with water, and each member of the circle held, usually in the left hand, one test tube which served as the anode. The main tube, which contained the joined wire from all the smaller tubes was allowed to lie on the table, or propped up perpendicularly. This served as the cathode where the energy thought to be emanating from the members of the circle would gather. In the circle men and women sat alternately.

During such a séance, Pogorelski stated that from time to time phosphens could be observed, and by these he meant not light waves in the ordinary sense but images due to direct irritation of visual

[1] The details given, both on the experiments on the exteriorization of sensibility and the discovery of hidden objects, are not sufficient to enable us to judge the reliability of either the conduct of the experiments or the method of reporting them. Since, however, Pogorelski apparently gives no information as to whether the person who hid the nail was in the room or not when it was discovered, it would seem that grave doubts remain as to whether his experiments in this field were of any scientific value whatever.

nerve centres. He stated that he demonstrated these appearances in 1898 to a group of twenty-two professional people and, with the exception of two or three, all of them saw the luminous images emerging from the main tube. First of all there appeared a multi-coloured spark, moving very slowly on a circular trajectory, tracing a third to a half of an arc and this spark was accompanied by a characteristic dry crackling sound which was heard by everybody, even by those who did not see the light. The second spark was like a slowly moving pellet of light and to some of the people the main tube was visible in the darkness the whole time, like a long candle, from the end of which occasionally a small luminous cloud emerged rising about six inches above the tube and remaining for some time. Pogorelski explained the fact that some people failed to see the luminous appearances by stating that this proved his theory, namely that the phosphen was not an ordinary light effect, since, as other experiments had shown, an extremely high development of the sense of sight was required for seeing these appearances. It was through these and similar experiments that Pogorelski arrived at the conviction that a phosphen of physiological energy had been clearly demonstrated.

Apart from these experiments in phosphens, Pogorelski made some attempts at demonstrating the exteriorization of sensibility (*Rebus*, 1898, No. 24, pp. 208-209). He believed that since the waves of what he thought was physiological energy had a rather higher amplitude, the fields of force were arranged in distinct planes lying in parallels and surrounding the body on all sides as it were by layers. The distance between these layers could, he thought, be measured and they depended on the depth of the hypnotic state of the subject and other accidental somatic conditions.

There is no doubt that Pogorelski was much influenced by the work of Albert de Rochas who in his book *L'Extériorisation de la Sensibilité*, first published in Paris in 1895, dealt with the whole subject, illustrating his thesis with drawings and a photograph of radiations from the finger of a subject connected to an induction coil, an example furnished to Rochas by one of the assistants in Pogorelski's experiments. In order to explain the phenomena of sensibility of this kind, Pogorelski believed that the sensitive's reaction to a particular sensation, as in the pin experiment, produced in the supposed field of force, is the reaction of his hyper-sensitive skin to some kind of magnetic perturbation, in other words the sensation of pricking that he experienced was a kind of reflection of the returning wave.

This naïve approach to problems which he clearly did not understand suggests the value that we can put on Pogorelski's work. There seems little evidence to suggest that the alleged phenomena produced by the phosphenophore were due to anything other than the imagination of the observers and the photograph sent to Rochas by one of Pogorelski's assistants is, I think, not a photograph of any effluvia from the fingers of the human subject but one of those many photographs which have been taken after photographic plates have been maltreated by getting subjects to press their fingers on them or to wear them round their necks at night. From the scientific point of view, therefore, it seems that Pogorelski's experiments have no validity and that his naïve credulity was at least equal to that of the Spiritualists whose theories he ridiculed.

Conclusions

Summing up our observations on the development of animal magnetism and hypnotism in Russia in the nineteenth century and without indulging in any sweeping generalizations, it may, perhaps, be said that the predominant characteristic of the Russian researchers was their rationalistic attitude. This was based on their positivist philosophy and was very often openly demonstrated and, with a very few exceptions, was never totally absent. This tendency was already evident in the work of Velianski who, as we have seen, tried to demonstrate that a close analogy existed between the purely physical properties of the magnet and the action of animal magnetism on the human organism, or, in other words, that the explanation of magnetic phenomena was to be found in physics and physiology.[1]

An interesting illustration of this same position may be found in an article on somnambulism and hypnotism by E. Pimenova in a serious monthly magazine *Mir Bozhiy* [The World of God] (29). Even though this journal represented a non-materialistic, religious philosophy, the author appeared to be a disciple of Auguste Comte. At the commencement of her paper she declared that both somnambulism and hypnotism belonged to the field of physiology and she was openly scornful of certain aspects of animal magnetism, maintaining that although both the church and medical science had condemned these practices, various charlatans were still

[1] Owing to his scientific approach, Velianski acquired a certain influence over the Russian intelligentsia and in particular on the young writer A. Herzen, a friend of Pushkin and a famous revolutionary (28).

producing results by trickery and the uneducated public was still interested in magnetic séances. Pimenova gave a brief outline of the history of hypnotism, beginning with Faria and then continuing with Braid, Carpenter, Charcot and Liébeault and ending with Ochorowicz. She compared certain hypnotic and somnambulistic states with a form of Arctic hysteria (*ämürakh*, *omurax*, *meriak*)[1] occurring in Siberia, a trance-like condition in which the patient repeats and mimics everything which is said and done by the operator and which appears to be contagious. In conclusion, Pimenova, as a supporter of the Salpêtrière school, stated that hypnosis was a pathological condition, but that suggestion had an important social role and might, in particular, be of value to pedagogy.

Here again we observe the persistent tendency of Russian researchers to seek for practical applications of hypnotic phenomena, a tendency which is closely connected with their predominantly sceptical, positivist and physiological approach to the subject. Whether the experiments were with frogs, like those of Danilevski, or with apparent clairvoyants, like those of Khovrin, their interest was mainly not so much epistemological as pragmatic. It is doubtless to this Russian attitude that one should attribute the fact that both hypnotism and suggestion were so early and so successfully applied in Russia to therapeutic ends. The result is that hypnotherapeutic technique is more generally advanced in Russia than elsewhere (30), having survived even through the strict application of the principles of dialectical materialism in the Stalin era.[2] The influence of rationalism and utilitarianism in Russia is therefore responsible for the fact that research into the higher phenomena of animal magnetism, which we include today under the collective term of parapsychology, has never made much progress in Russia and it must also be remembered that interest in this aspect of hypnotism was often associated with credulous persons such as

[1] Cf. M. A. Czaplicka's book *Aboriginal Siberia* (Oxford, 1914, pp. 315 ff.), and for similar phenomena in Mongolia see D. F. Aberle's " 'Arctic Hysteria' and Latah in Mongolia " (*Transactions of the New York Academy of Science*, May, 1952, Ser. II, Vol. XIV, pp. 291-297). For a useful list of references see P. M. Yap, " The Latah Reaction " (*Jour. of Mental Sci.*, 1952, XCVIII, pp. 515 ff.). It is possible that Pimenova's reference to Arctic hysteria may have been derived from echolalia which both Heidenhain and Charcot had observed in hypnotized subjects. Similar phenomena have also been recorded in trance mediums, for example with the famous American sensitive Mrs. E. Piper (see *Proc.*, S.P.R., 1915, XXVIII, p. 234).

[2] Cf. *Hypnosis throughout the World*, edited by F. L. Marcuse (Springfield, Ill., 1964, pp. 242 ff.).

Aksakov and Wagner whose methods were obviously distasteful to serious Russian scientists.[1]

To sum up, therefore, what may be observed in Russia at the close of the nineteenth century is a gradual decline of interest in the paranormal aspects of hypnotism and the gradual emergence of a frequently uncritical and emotional Spiritualism which, in certain cases at least, was not far removed from religious fanaticism. As regards later trends in hypnotism the influence of Pavlov became so dominant that it could almost be compared with a religious faith and his ideas on the subject were defended with such fervour that any opposition was treated as a heresy. It is possible that this attitude belongs to the past and that the powerful stream of Russian science will sweep away limitations which hinder its progress.

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Hypnotism in Poland

Hypnotism in Poland 1800-1900

Introduction

In research on animal magnetism and hypnotism in nineteenth-century Russia the student is handicapped by the inaccessibility of the original Russian sources and by the lack of many important Russian works and periodicals in the libraries of the West. As concerns Poland, the task is, however, much simpler since sources are available, although they are very few in number, because interest in Poland during the nineteenth century can only be considered as negligible. Indeed, after very careful research only some thirty articles distributed in various periodicals and even less than half a dozen books were worthy of consideration. The only observer whose name in this field is still to be remembered is Dr. Julian Ochorowicz (1850-1917).

In discussing the work of Ochorowicz, it should be emphasized that he possessed a brilliance, knowledge and authority that brought him into the front rank of his Western colleagues. When he was still a young man of about 30 he had already acquired an international reputation which, however, was of least consequence in his native land and the bulk of his work on animal magnetism and hypnotism was performed in France and not in Poland. This apparently peculiar circumstance is easily explicable, for during Ochorowicz's lifetime Poland had no political independence and existed in a state of partition between Russia, Austria and Germany, a period which lasted from 1795 until 1918. Consequently the main currents of thought and effort of the nation were directed towards the recovery of its freedom and the defence against the ever-increasing German and Russian influence in the country rather than towards more universal pursuits. Thus, when people in the West were talking about mesmerism, to Poles it remained an empty word ; they were discussing their national tragedy, or were organizing

a series of insurrections, all of which were equally unsuccessful. In brief, the history of Polish research in animal magnetism and hypnotism can, for all practical purposes, be covered by the activity of a single man and that man was Dr. Julian Ochorowicz. Having made an examination of his work, a fairly thorough acquaintance with the whole subject will be gained.

The Work of Dr. Julian Ochorowicz

Dr. Julian Ochorowicz, having obtained his medical degree in Poland, proceeded to a doctorate in philosophy in Germany and his first book was published in Leipzig in 1874 (1). This work, concerning the conditions of consciousness, was originally written in German and its list of references comprises 56 works in French, German, English and Italian. His early interest in psychology is shown by the fact that as early as 1869 he had published an essay (2) on methods of psychological research and while still in his twenties he became an assistant professor of psychology and philosophy at the University of Lvov (Lemberg). His interests, however, were not limited to those fields ; among other subjects he wrote on science, anthropology and education and by 1900 there were fifteen books to his credit in Poland.

The problems of both animal magnetism and hypnotism attracted the attention of Ochorowicz in his early years and his first work published in Poland was an essay entitled " Magnetyzm Zywotny " [Animal Magnetism] (*Gazeta Polska*, Lvov, 1867). In this paper he published no original material and even himself later dismissed it as the product of a 17-year-old dilettante and so we shall pass directly to his article (3) in *Niwa* on hypnotism and animal magnetism which was published in 1881 and in which some of his own experiments are described. What follows is the abridged text of the article, as far as possible in the author's own words.

" I shall report here on my own research without, however, offering any explanation. I owe to the kindness of Donato[1] permission to experiment with his somnambule Mlle Lucille after they arrived in Lvov in 1881 for a series of public séances during their European trip. Mlle Lucille, who was

[1] [Donato (1845-1900), whose real name was Alfred Édouard d'Hont, was a Belgian-born mesmerist who, with his subject Lucille, enjoyed an international reputation. He himself stated that he did not believe in mental suggestion and stressed the role of ordinary suggestion in the magnetic state. He did not believe that he possessed any paranormal gifts but only natural ones, which were quite sufficient for him.]

accustomed to work only with her own magnetizer, was not very pleased with this arrangement, but did not say anything and just sat quietly on a chair in the middle of the room. I took a seat in front of her, holding her hands and looking into her eyes. For the next three to four minutes no visible effects occurred and then I began to make passes, touching only her head and forehead. Slowly her eyelids began to lower, without however closing entirely, until I made a few more passes before her eyes. After five or six minutes her face changed and became paler, but I could see that she was not yet entirely asleep and it took a few more passes before she fell into a deep trance after another two minutes. Having examined carefully the condition of her skin and muscles I began to check on her sensitivity to the movements of my hand, to which she clearly reacted at a distance of 8-10 cm. Having ascertained that her eyes were completely closed, I made movements behind her, and every time that my hand moved towards her back, both on the left or right, the muscles of her neck, jaw and muscles of her fingers on the corresponding side produced a visible tremor. On the other hand, when I touched her directly there was no effect whatever.

Her eyelids proved the most sensitive to the approach of my hand. Moving my fingers up and down at a distance of 3-5 cm. I was able to make her raise and lower them alternately and the impression produced by this experiment was as if there existed a genuine attraction between my fingers and the eyelids of the somnambule. When the movement of my fingers was arrested half way up or down, Lucille's eyelids would also stop in the middle, without even a tremor. Naturally, I never announced what experiment I intended to do next : the action produced appeared to be some sort of a nervous reflex. If, after having opened Lucille's eyes by movements of my fingers I held one finger in front of her, her sight became as it were riveted upon it ; and when I traced with my finger various figures in the air I was able to make her follow those movements, not only with her eyes but partly with her body. Moving my finger suddenly backwards, from the opposite direction, I was able to produce a local catalepsy of the eye-muscles, with her sight fixed on the last point where my finger was a moment before and in order to cancel this position I again had to close her eyes."

Ochorowicz then proceeds to discuss how the sensitivity of Lucille's skin became increased :

" Standing behind the sleeping somnambule and touching her back through her dress and corset, I asked her to tell me with which hand I was touching her, my hands being in such a position that she would have been unable to see them, even if her eyes had been opened. At first she was unable to answer, but after I had repeated the request she replied correctly several times. Then I signalled to Donato, who was sitting behind me writing letters, to come and touch the somnambule with *his* hand. I had previously planned this experiment and was very curious as to the result, since in the state of so-called magnetic sleep the subject, whenever touched

by anyone except his magnetizer, makes a movement of aversion or shows distinct displeasure. This took place every time if anybody else touched Lucille—even accidentally—when she was entranced by Donato. But now the roles had become reversed : I, formerly a stranger, had become the magnetizer. But when Donato touched her on the back at first she had the usual action of recoil, but then her face brightened and she gave a faint smile. When I asked which hand had touched her she answered correctly that it was the right hand, and when I asked whose hand it was, she replied that it was Donato's, giving the same pleasant, although somewhat mechanical, smile. Whenever I touched her, no reactive reflex was observed, her face remaining unchanged and, while refusing to reply audibly, she only responded with movements of her hand.

In order to test the sensitivity of her hearing, I stood at a distance of four yards and counted ' Un, deux, trois ' in a voice so low that those people next to me could hear practically nothing. Lucille, on her part, did not hear anything. Then, acting on an old tradition in magnetism, I made a few movements near her left ear, then returning to my former place and started counting again, in the same low voice, ' Un, deux, trois '. ' Un, deux, trois,' said Lucille, repeating my words. When I tried the same experiment at a longer distance, she was unable to hear me at all.

I then proceeded to make my most important experiment involving catalepsy and a muscular tetanus. As before, I did not mention what I intended to do, but on the contrary at first made some experiments with the purpose of misleading her and preventing all guessing. In order to produce catalepsy I used certain specific passes which were described by the old magnetizers and which consisted mainly in shaking both my hands in front of the subject's shoulder, which was to be experimented upon. In a moment her arm, which I was holding in a position differing from that customary to Donato, became rigid but not, however, rigid enough to maintain indefinitely the given position. The pressure of my finger on her muscles, which was so successful in the Heidenhain experiments, produced here no effect, whereas after I repeated the ' trick ' of the old magnetizers, her arm became arched with the fingers turned upward and the condition of rigidity set in completely within a few seconds. Her arm, hard as wood and cooler than usual, remained permanently in this given position, with the fingers so stiff that one could not bend them and the pulse very fast, but so faint as to be now and then detected only as a tremor. Indeed, this explained why two physicians who were examining Lucille during the experiment could not agree : one declared that the pulse was not perceptible, while the other stated that it was very fast.

Previously I had made a similar experiment. In one case the subject's pulse, normally 64, rose to 104 during the passes, then fell back to 68 and during the cataleptic condition remained at 96. My notes were not sufficient, however, to determine if such a cycle is typical of these cases.

In the condition of rigidity the arms show a remarkable resistance and even feeling of lifelessness. Previous to this, experiments had been

conducted with Dr. Zagorski in trying to bend the arm of a rather weak girl, but without any success.

What is probably the most interesting and remarkable phenomenon of the magnetic state is the ease with which the cataleptic condition can be produced and dismissed. In the case of Lucille, all I needed to restore her normal condition was to make a few slight movements in front of her as if dusting her down and her arm would then instantly begin losing its rigidity, with her fingers again becoming straightened and soft."

Ochorowicz now goes on to state that his experiments in thought-transmission were not successful with Lucille. In general she reacted much more strongly to Donato, who after six years of work with her had turned her into an almost miraculously obedient instrument. Continuing to describe his experiments in magnetism he writes as follows :

" Two weeks after my experiments with Lucille I made some further tests with my students at the university, thanks to which I was able to solve some problems. I also came to a decision at that time to drop hypnotism and concentrate on magnetism, which gives more interesting results and allows the magnetizer to exercise complete authority over physiological changes in his subject.[1]

From the ten students whom I magnetized at this time, four showed no symptoms whatever, while six produced outstanding symptoms, including trance with anaesthesia, hyperaesthesia and rigidity. One of them, Mr. R., a student of philosophy, gave even more amazing results than Donato with Lucille. For example, when in a cataleptic condition, Lucille's arm would begin to fall from an upright position after ten to twelve minutes, whereas Mr. R.'s arm remained rigid for three-quarters of an hour. His anaesthesia was so complete that neither pricking nor applying ammonia to his nose, nor the strongest induction current produced on him any impression, whereas I could restore sensitivity and then abolish it within the space of one minute. One characteristic thing about this subject was that, regardless of long, exhausting experiments involving catalepsy and lying on the edges of two chairs, he never felt tired, whereas I, whose part was limited to several gestures, felt completely exhausted."

Unlike most researchers of that period who, following James Braid, devoted more and more attention to what the latter called

[1] [It ought, perhaps, to be said here that Ochorowicz was of the opinion that magnetism was not to be confounded with hypnotism, since in his view, one of the most important differences was that the phenomenon of *rapport* did not exist in hypnotism but only in magnetism. This idea seems to have been derived partly from the belief of Ochorowicz that in magnetism individual physical action is apparent whereas in hypnotism it is suggestion that has to be stressed. Later observers were of the opinion that these alleged differences had no real validity being merely aspects of the same condition under varying circumstances.]



Dr. Julian Ochorowicz

From an engraving by Lovey, Paris 1885
reproduced in *Bluszcz*.

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hypnotism, thus relegating the old theories of animal magnetism to the past, Ochorowicz, according to his own admission, took the opposite course. To him, the old method of magnetizing, as well as the effect of the magnet on his subjects, seemed of particular interest and he devoted to this research a series of experiments the results of which he described in an article (4), the substance of which follows in a condensed form.

" When I observed for the first time the action of the magnet on the human body I felt as if I had seen, for example, a piece of iron flying up from the ground. The phenomenon is, however, far more complicated than it seems at first sight and can be divided into several categories. *Attraction* is the rarest and I observed it in only a few subjects and then only in the magnetic sleep. It consists in the fact that when a magnet is brought near the sleeping subject without his knowledge and which he has no possibility of seeing, at a distance of perhaps 10 to 15 cm., his hand, leg or head, whichever is the nearest to the magnet, becomes attracted by it and follows it in every direction, until rigidity sets in. A similar phenomenon may take place if instead of the magnet I brought my own hand close to the sleeping subject, or even a piece of metal of some kind, or some other object.[1]

After attraction, *anaesthesia* is the most common phenomenon and I have checked it in at least eighty subjects, sometimes using the magnet for the purpose of restoring sensitivity. During the anaesthetic state *rigidity* usually occurs and this can last up to five hours and can be produced not only by the magnet, but by other metals, or simply by the hand. Another action of the magnet, important from the medical point of view, is its heating effect. It becomes sometimes so strong that paralytics have been burnt by the magnet right through their clothing.[2]

It is only rarely that the use of the magnet produces a deep sleep, although in exceptionally sensitive subjects approaching the magnet to the head may induce the onset of sleep or change normal sleep into the somnambulist condition. Other effects of the magnet may be shown by the fact that occasionally epileptics may betray symptoms similar to fits under its influence and then be calmed down under the influence of the same magnet. Again, the use of the magnet may remove nervous pains or produce unpleasant irritations, but in the case of the removal of pain the hand is equally effective."

Summing up his impressions, Ochorowicz maintained that it was possible with the help of the magnet to discover and define a

[1] [It will be observed that in these experiments Ochorowicz seems to be unaware of the influence of suggestion and the possibility that the subject is aware of what he is supposed to do.]

[2] [Ochorowicz appears not to have given any details of this remarkable effect, which suggests that at this period he did not appreciate the importance of the claims that he was making.]

specific sensitivity of the nervous system so far unsuspected by neurologists. By the aid of these methods, this sensitivity can be detected in about a quarter of people examined and consists in their being easily affected by electrical changes and being brought to the magnetic or hypnotic sleep. Nervous ailments can be discovered by this means and some of them can be cured in the same way.

These beliefs of Ochorowicz, which would now be considered as fallacious, occupied a good deal of his time at this period and in 1884 he published an article (5) which was the result of his studies of the problems of magnetic action.[1] Rejecting the work of Reichenbach as not sufficiently scientific Ochorowicz answered the question as to whether the magnetic sense existed in the negative, since not everybody reacts to the magnet and therefore the reaction must represent an individual faculty, not a general one. If a subject is not sensitive to a magnet, increasing its strength would make no difference. On the contrary, those who are sensitive will react to a magnet of medium size even if it is simply applied to one finger.

Acting on these somewhat peculiar beliefs, Ochorowicz continued his research on at least 700 subjects, among whom he found only 236 who responded and their reactions varied so much in strength and quality that they could be grouped into several categories, a discussion of which need not concern us here. One phenomenon, however, mentioned by Ochorowicz seemed to him very extraordinary and he observed it only in a few subjects and only when they were deeply entranced.

"This," he writes, "is a sensation of irresistible pull, followed by actual attraction and resulting in total anaesthesia and automatism. The subject on which I demonstrated it in 1881, and which I described in *Niwa* [4], was a case of a healthy young man who was placed in the magnetic sleep. The eyes were closed, the pupils turned up and the head entirely wrapped up in an opaque cloth. Nevertheless, every time the magnet was brought near him at a distance of more or less 15 cm. his hand moved quickly towards it and followed all its movements until it finally became rigid and devoid of all feeling. The hyperaesthesia then had to be re-established before the

[1] This paper was probably suggested to him by the fact that he had seen in *La Revue Scientifique* in 1884 (3 sér. IV année, No. 12, pp. 353-359) a translation of a lecture given by Sir W. Thomson which he had delivered at the Midlands Institute in Birmingham. See Thomson's paper "The Six Gateways of Knowledge" in *Nature*, 6 March 1884, pp. 438 ff. and 16 March, pp. 462 ff.) in which he discusses the sixth sense. Cf. *Proceedings*, Society for Psychical Research, 1884, II, p. 57, where Barrett discusses the theory of the existence of the magnetic "sense".

experiment could be repeated a second time.[1] When it came to explaining the causes of the above phenomena, I should like to be excused from giving even a tentative answer. At this point of our knowledge it is simply impossible. All I can do now is to share with my readers certain results of my research ; if not complete, they seem to me at least beyond doubt.

If it be asked whether the action of the magnet is real or imaginary, in other words physical or psychological, then I answer that it is both. And is the direct action of the magnet on the tissues or on the blood of the same physical nature as on the nerves ? It seems it is not, or at any rate these effects are not to be explained by magnetism alone. I would rather be inclined towards the hypothesis that in most cases the magnet represents, as it were, a substratum of another kind of energy, so weak from the physical point of view that it escapes instrumental registration and becomes manifest only through certain extremely sensitive nervous systems."

These views of Ochorowicz led him to maintain that an inseparable interdependence existed between the fact of being influenced by a magnet and hypnotic sensitivity. He had come to the conclusion that all persons who reacted to the magnet were hypnotizable, whilst others were not, and that those persons who were sensitive in this way could be cured from most nervous diseases through magnetic or hypnotic procedure. These views led Ochorowicz to invent what he called the " hypnoscope " which was simply a magnet in the shape of a slit tube and which when placed on a person's finger was supposed to indicate the subject's magnetic sensitivity. This invention created a great deal of interest at the time, but is now completely forgotten. Ochorowicz contributed a note (6) on it to the Paris Société de Biologie in 1884 and an account appeared in a technical paper *La Lumière Electrique* (7), of which an English translation, following that published in the English journal *The English Mechanic and World of Science*, was reprinted in the *Journal* of the Society for Psychical Research (8) in 1885. Other writers differed in their views. Thus, G. W. Gessman (9) maintained that a prolonged application of the hypnoscope could produce the complete hypnotic condition in the sensitive subject and J. Grasset (10) accepted Ochorowicz's theory, while verifying the activity of the hypnoscope. Others, however, such as Orlowski and Rzeczniowski in Poland rejected it entirely.

The fact that the Société de Biologie, through the influence of Richet, published an account of Ochorowicz's invention led to a good deal of discussion which otherwise this might not have excited. Both the *Gazeta Lwowska* carried an account of it, as well as the

[1] [Cf. *Journal* of the Society for Psychical Research, 1885, I, p. 280.]

Russian weekly *Rebus* (1884, No. 30, pp. 283-284). As has already been mentioned, the *Journal* of the Society for Psychical Research translated the paper from Ochorowicz and stated that although his experiments were numerous some of his generalizations were somewhat hasty and concluded that he had not taken sufficient precautions to preclude the effects of the imagination, which were due to expectant attention, thus vitiating some of the explanations at which he had arrived.

In the meantime the general interest in magnetism and hypnotism among the Polish public was gradually increasing and it was again Ochorowicz who responded to this need by delivering in 1889 and 1890 a series of lectures in Warsaw, which were subsequently published in book form under the title of *Odczyty o Magnetyzmie i Hypnotyzmie* [Lectures on Magnetism and Hypnotism] (11). Since this work is almost the only original work on the subject that appeared in Poland in the nineteenth century, some indication of its contents may be given. As in every other single work of Ochorowicz, this one in its turn presents some new material or new approach to facts already known.

The first and second parts of the book deal with the history of the subject, the author giving a summary of facts related elsewhere and a brief evaluation of the theories put forward by the principal European researchers and in particular those connected with the two contemporary French schools of the Salpêtrière and Nancy. As is well known, the Salpêtrière school, under Charcot, admitted the physical action of the magnet and other metals in producing the magnetic sleep and they also came to the erroneous conclusion that hypnosis represented a kind of morbid condition, closely related to hysteria. These ideas were quite contrary to those taught at Nancy, where Bernheim did not consider hypnosis a neurotic condition but stressed the influence of suggestion. According to Ochorowicz, on the other hand, the ideas of both these schools grossly simplified the problem, since it was impossible to generalize without falling into serious error.

The author devoted the third part of the work to a description of the hypnotic states. He maintained that a general type of such states did not exist, since there were as many hypnotic states as there were hypnotized persons and even in the same person different effects could be produced. After a long discussion and description of his observations dealing with experiments in hypnotism, he described a case in which what would now be called travelling clairvoyance was exhibited. The boy who was being put to sleep

imagined that he was able to see at a distance and he said that he went to the house of some of Ochorowicz's friends in Lithuania. He announced that they were sitting at table and eating potatoes with yoghourt and the expression on his face changed as if he was enjoying being there. Ochorowicz was convinced that after being awakened the boy would be ready for supper, but when it was served he refused to eat anything. On being asked why, he said that he had eaten plenty of potatoes with yoghourt, although he was able to remember nothing else, and showed not the slightest desire for anything to eat during the ensuing evening.

Ochorowicz made a second experiment of this kind. He and a somnambule were going to the theatre together and she declared that she was hungry and would like to eat before the performance, while he preferred to have supper later in order not to be late. Ochorowicz determined to put her to sleep, suggested that she was not in the least hungry, then awoke her and proceeded to the theatre. The suggestion was so efficient that she wanted to eat nothing further until the next morning. Continuing his theoretical discussions, but without going into detail, Ochorowicz in these lectures again stated that many specific traits of the magnetic condition were entirely absent in the hypnotic state. He still felt obliged to declare that he accepted the possibility of physical action of one human organism on another without physical contact and he accepted also the possibility of direct action by thought and of receiving at a distance certain impressions apart from the normal channels of sense, even though such phenomena occurred rarely and were seldom capable of withstanding severe scientific scrutiny.

He concluded his lectures by affirming that both medical men and psychologists neglected all research on the mutual interaction between mind and body, a question now admitted to be worthy of the closest attention not only in the fields of physiology and psychology but in parapsychology also.

Before we proceed to a discussion of Ochorowicz's major work (12) which immediately became almost a classic, namely *Mental Suggestion*, it may be of interest to mention the fact that, owing to his interest in somnambulism, Ochorowicz frequently came across alleged cases of clairvoyance in the magnetic sleep and devoted a special study to them, which, however, does not come within our terms of reference since they mainly occurred in the twentieth century. Nevertheless, one lecture (13) in which similar phenomena were described was given in 1893 and although it appeared in print twenty years later it is of sufficient interest to be included here. On

the subject of seeing with closed eyes and talking in an unknown language, part of its text, considerably abridged, reads as follows :

" It was only quite recently that I had the first opportunity to observe reading with closed eyes during the trance state. This was due to the sensitive faculties of my cousin, Miss S. Her health was very poor and it was only owing to frequent magnetic treatment that she was able to complete her studies at the Marian Institute.[1] Consequently, I used to keep her under the magnetic sleep for some hours at a stretch and on 15 March 1893 she passed spontaneously from sleep into the somnambulist condition, came up to me and asked what I was reading. Then, before I had time to answer and with her eyes closed and her eyeballs turned up, as is usual in such cases, she began spelling out the word SLOWO [' The Word '] which was the title of the paper which I was reading. Following this incident I pressed down the lids of her eyes with two fingers of one hand and with the other placed before her a copy of the paper NIWA [' The Field ']. She read ' AWIN ' and asked me what it meant, and I explained that it was the word ' NIWA ' which she had read backwards.

A few weeks later, when one afternoon she was in the magnetic sleep, she again showed the ability to read with closed eyes and was able to read a number of single words, mostly backwards. When I kept my fingers on her eyes she said she could read more easily and apparently the vicinity of a magnet was helpful to her, since she was able to read the titles of books on a shelf where a magnet was lying.[2] These experiments in reading with the eyes closed were usually undertaken when Miss S. was in a semi-somnambulist state and for some time after the tests her eyesight showed symptoms of strain.

It was soon afterwards, when in the magnetic sleep, that my cousin began talking in an unknown language, which I finally managed to learn, although with a good deal of trouble. Similar experiments were repeated with equal success in April and May 1893, after she had also shown in the magnetic trance clairvoyant knowledge of certain facts which were unknown to me as, for example, the number of horses racing on that particular day."[3]

In his account of the phenomena associated with Miss S., Ochorowicz stresses her curious habit of reversing the spelling of various words, such as " gulP madA " for " Adam Plug ". During

[1] [A secondary boarding school for girls.]

[2] [Since apparently we are not told where the treatment of Miss S. took place, it is uncertain if she had been in the room previous to the time when she read the books on the shelf. Had she been in on a previous occasion, the success of the experiment would hardly justify its inclusion.]

[3] [The fact that Ochorowicz did not know the number of horses racing on that particular day does not seem to exclude the fact that Miss S. could have had normal knowledge of it.]

these experiments Ochorowicz decided that some of the effects produced were certainly not due to thought-transference, as in a few cases neither he nor a friend of his who was present knew what was being read until after verification. A few of the tests were apparently made when blindfolded and although she met with some success the inadequacy of blindfolding in tests for eyeless-vision makes the tests of little scientific value. On the other hand, one effect which was reported was certainly of an unusual character since she was able in demonstrating eyeless-vision to see letters that were covered with her hands, but was unable to see those that were not covered.

Unfortunately, in all these tests it appears that Ochorowicz does not give the necessary details to enable the reader to come to any conclusion about them, as is also the case with information she gave on the order and names of various race horses and the results of the races. Out of six races she is said to have guessed correctly four first horses and once a name in reverse. In reading words she stated that it was easier for her to do so when actually touching the printed words alternately with her left or with her right hand as then " it comes to the brain at the back " as she expressed it. On certain occasions she used to read the words next to those which she touched.

Apart from these experiments in eyeless-vision she was able to use her hypnotic powers to regress into a former period. Thus having lost a book which did not belong to her she was able to determine what happened to it by remembering in the hypnotic state that a friend of hers had pulled the book from under her arm when they were out walking and had forgotten to give it back, an occurrence which was afterwards proved to be correct.

Ochorowicz then continues his account :

" One day my cousin fell down on the stairs and badly hurt herself so that she had to be kept for days under the magnetic sleep since as soon as she woke up the pain increased. She was not able to hear anybody except myself and even then she did not understand me unless I spoke in her somnambulist language. Her condition improved daily, so that on the sixth day I awakened her, but she became worse and in the afternoon I had again to put her to sleep. Then, as had happened before during her illness, she developed clairvoyance and dictated to me two pages of instructions in her somnambulist language with regard to her treatment. For example, she wrote : ' Czepo czilenti salantonar . . .' which meant ' Wake me up after twelve . . .'. Her instructions included a bath of 28° C., no sour foods, no massage for a few days, and that the magnetic sleep should not be too

deep as otherwise the rate of metabolism was slowed, whereas it should be quickened.

Her reactions to water were rather curious : she could only feel the water in her bath if it had been previously magnetized but even so she could not tell when she actually entered the water, or whether it was warm or cold, but she could always detect without fail whether the water had been magnetized or not. Moreover, she did not wish to eat any food that had not previously been magnetized by myself."

Ochorowicz's major work (12) *Mental Suggestion* deserves closer attention, not only because it is the most important of the Polish contributions to the subject but also because it is one of the most notable contributions to research on magnetism. Professor Charles Richet, the celebrated French physiologist and enquirer into parapsychological phenomena, wrote a preface to the French edition of the work and expressed his high opinion of it in the following terms : " A multitude of facts are set forth herein . . . and nowhere else can you find brought together so many data. But it is not enough to accumulate facts—the facts must be rightly observed. In this respect Mr. Ochorowicz's criticism of the facts he has witnessed, or that he cites from the accounts given by other scientific men, is as rigorous as is called for by a subject so difficult. The most notable thing in his work is the resolute, unflagging determination to weigh all objections, to put away all causes of bad faith, whether conscious or unconscious . . . and not to be content till every possible cause of illusion has been removed. . . . One feels that he has a passionate love of truth."

The purpose of the book was to demonstrate step by step how, in his own experiments, Ochorowicz had arrived at what he considered indisputable proof that mental suggestion existed and what were the methods he applied in order to avoid the various pitfalls in the path of all those engaged in psychical research. The first and most interesting part of the book is devoted to these experiments. The second is an analysis and evaluation of results achieved by other workers, while the two last sections are attempts at theoretical explanations of the observed facts and general conclusions. Consequently, it is mainly the first part that will be discussed here in some detail, leaving the three others to be dealt with in a more cursory way.

From the beginning of his experiments in magnetism, when he was still a student, Ochorowicz had observed that in certain magnetic states one could observe phenomena of what he called " transmission ". For example, he wrote,

" Yet several times I had tested the alleged action of thought upon a certain number of subjects.

First at Lublin, in 1867, I experimented on a youth of seventeen, one pretty difficult to endorm, but who, once in the somnambulic state, presented certain interesting phenomena.

For example, he would recognize any person of his acquaintance who might simply touch him on the back with a finger. Once he distinguished in this way as many as fifteen persons . . . some of these persons entered after he had been endormed. . . . He always distinguished my touch from that of every one else ; and once he recognized a lady that had entered unknown to him, and whom he had seen for the first time several days before.

How could he do it ?

As for the difference between the magnetizer and a stranger, it is very clearly recognized by many somnambules. . . . Because these persons, say the magnetizers, are not ' in rapport ' with the subject " (p. 10).

" This phenomenon I have since verified in nearly all highly-sensitive subjects, when *magnetized* (*not* hypnotized), and so I have been obliged to postulate an individual physical action not found in Braid's hypnotism " (p. 23).

" What, then, is ' rapport ' ? To state the question clearly, it is first to be observed that this phenomenon does not exist in ' hypnotism ' properly so-called. Let an hypnotized subject be touched by whomsoever . . . then the touch of all other persons will have the same effect. He hears either everybody or nobody, obeys everybody, and can be awakened by any one " (pp. 10-11).

Continuing his discussion on *rapport* on which he held views with which other hypnotists[1] would not agree and which need not detain us here, Ochorowicz went on to discuss an experiment made upon the same subject in order to determine the reality or otherwise of eyeless-vision.

" I take up a book at such distance from the subject that he cannot see what it contains, and I open it anywhere. I then bid him read.

' I do not see clearly,' he answers. I suggest to him the first two or three words of the page, and ask him to go on with the rest. ' That is in the middle of the second volume,' says he, naming the chapter ; ' it is Kraszewski's novel " The World and the Poet " '.[2] ' Just so,' I answer, ' go on, then.' And to our great astonishment he goes and reads a whole page, with hardly a slip. Whenever I laid the book aside he stopped : he ' read '

[1] For the whole problem of *rapport* in hypnosis see Albert Moll's *Der Rapport in der Hypnose* (Leipzig, 1892).

[2] [*Poeta i Świat : powieść* (various editions).]

fluently when I kept my eyes on the text. I turned over a page ; still he read well . . .

. . . do we need a better proof of mental suggestion ?

Unfortunately, we do ! For, first, he ' read ', though less well, while the book was closed ; he needed only to have the opening phrase of a passage given him—therefore it was not thought-transference. . . . Here is the explanation of the mystery : The youth had shortly before read twice over the novel by Kraszewski already mentioned—had read it as people used to read in Poland in those days, and particularly those 17 years of age. He knew it almost by heart. Evidently he could not recite page after page *verbatim* in the waking state ; but the one thing that our experiment proves is, the astonishing *activity of recollection in somnambulism* " (pp. 12-13).[1]

In discussing some of the more curious phenomena to be observed in the magnetic state, Ochorowicz mentioned auditory hyperaesthesia, stating that Donato was able to produce such hyperacuity in his somnambule by merely pointing at her ear. He had, he stated, ". . . repeated this experiment many a time, in one case—to mention no others—with a peasant woman in Zakopane in Galicia, who, though her ears were plugged and her head wrapt thrice around with a coarse thick kerchief, repeated words spoken as low as possible by me at the distance of 13 feet " (p. 22).

Up to that time Ochorowicz had obtained no evidence which led him to a belief in the reality of thought-transference. On the contrary, the experiments he had hitherto conducted had discouraged him, bringing to light, as they did, many sources of error and the fact that " it seemed clear that a skillfull magnetizer who has a suitably trained subject, can imitate mental suggestion perfectly, or may himself be duped by unconscious associations " (p. 23).

From 1875 to 1881 Ochorowicz was lecturing at the University of Lemberg on physiological psychology and many of his students offered themselves as subjects for all kinds of research. Ochorowicz thus described some of his work with them :

" One day I brought together six of my best subjects in a hall of the Polytechnic School, from which every ray of light was excluded, in order to test the alleged discoveries of Baron Reichenbach. We remained three hours in absolute darkness, yet were unable to verify any of the statements of the German chemist. But to make amends, we discovered a new fact of considerable interest, namely, that certain hypnotizable subjects see far more distinctly the phosphorescence of an electric machine than do other persons. Threads of light, quite invisible to the rest of us, and forming a

[1] This experiment was discussed by Frank Podmore in *Proceedings*, Society for Psychical Research, 1887, IV, pp. 562-563.

prolongation of the visible rays, were described perfectly by some of the subjects, and were objectively verified in divers ways " (pp. 25-26).

But even those two most sensitive of his subjects gave only a series of negative or nearly negative results when it came to producing the phenomena of mental suggestion and Ochorowicz himself admitted his growing scepticism as to their reality.

It was about this period that, having acquired a certain acquaintance with hypnotism, he resolved to apply it to the treatment of diseases. The results were surprising, he stated, and

" I saw not only that the assertions of magnetizers might be true, but also that a rational and methodical application would probably lead to the establishment of facts more surprising still. . . . Being absorbed in therapeutic study, I had neglected the problem of mental suggestion as apparently of no practical value ; and it was only by accident that I had occasion to observe a few more or less unexpected phenomena connected with it. For instance, one of my patients could always tell, as soon as I touched her, whether my impressions during the day had been pleasant or disagreeable. . . . As my attitude toward her was always the same, I marvelled not a little at this faculty of discerning my mental state. But there are a thousand ways of guessing such things, as from the expression of the face, or from the tone of the voice ; and there is no need to suppose a direct transmission. True, she could also tell whether before coming to her I had touched any other patient ; but she might have inferred that from certain signs of fatigue, or from my coming a little late ; perhaps, too, she was aided by olfactory sensations.

Another patient showed a like gift with regard to the persons who were habitually about her . . . and manifested this aptitude only at the moment of awaking. . . . She would then say of her own accord : ' Oh ! how weary X is of his work ! ' ' Why is Y so worried ? ' ' Today you have more hope of curing me, and you are very much pleased. I thank you for that,' etc. All this she would say before opening her eyes and often without a single suggestive word being spoken. Was there a real transmission of states of mind ? I did not think there was. The same people were always around her, and she knew them well enough to be able to make these prejudgments. But there were a few strange coincidences.

Finally, a third patient, a Frenchwoman, knowing not a word of Polish, made apt reply (in somnambulism) to an observation made in the latter tongue. There was no analogy between the words. But this thing did not occur again, all further experiments in mental suggestion having failed, so I set the occurrence down to the account of chance. This subject was easily hypnotizable . . and often, *in the waking state*, divined the complaint of a stranger by simply touching his hand.

Having heard of many feats of this sort I decided myself to investigate. . . . I took her to one of my patients . . . [who] thanks to her exceptional

constitution, looked well, and no one would, on first seeing her, suspect her case to be so serious.

The somnambule, after touching the patient's hand, named pretty nearly all her maladies. She did not describe the lesions in sufficient detail, but with regard to the symptoms her diagnosis was very accurate. And more accurate still was her capital description of the patient's character and of her bad habits.

'On what do you base your inferences ? ' I asked. 'Do you think that you see the organs that are affected ? '

'No,' she said ; 'rather I myself *feel* the symptoms of the disease.'

And, in truth, I have seen her suffer and for a moment present certain morbid phenomena of another patient that she examined, but whom I did not know" (pp. 31-32).

At this stage of his enquiry, Ochorowicz was not inclined to hold the view that his results were due to thought-transmission from himself : rather he preferred to conclude that there might be what he considered a less extraordinary explanation, namely a transmission of the symptoms of disease. It is not at all clear what Ochorowicz precisely meant by this expression, but it seems clearly derived from his theory that in magnetism, unlike hypnotism, there was a kind of nervous transmission from operator to subject, a belief which still persists even to the present time. Such phenomena as the nervous exhaustion felt by some magnetizers after treatment and the apparent transference from patient to operator of transient pains and sensations, led him to suppose that there was actually a physical or at least quasi-physical flow of something from the patient. At this time he did not seem to be aware of the potent effects of suggestion and consequently may himself have been a victim to some of its effects.

In 1884 Ochorowicz was in Paris, where he was able to see some of the performances in apparent thought-transmission by Stuart Cumberland, whom some people supposed to be a genuine exponent of thought-transmission. Cumberland himself thought that his "thought-reading" was merely a perception of touch, a kind of body-reading, and he had grave doubts as to the reality of the mental suggestion that Ochorowicz was seeking.[1] Ochorowicz had no illusions with regard to Cumberland, since he himself repeated the experiments and published the results in the *Gazeta Polska* of Lemberg in May 1884. It was only a year later that he came across a subject with whom he thought he was able to produce phenomena

[1] See Cumberland's account of his own work in his "The Art of Thought-reading" (*Glasgow Evening News,* 18 May 1889).

which he described as true mental suggestion. The subject in this case, Mrs. M., was a lady whom he was treating in France and who was suffering from hysteroepilepsy, aggravated by one attack of suicidal mania. She was able to be put into a deep hypnotic state and in this condition she would often remain without movement, until aroused by the physician. Under these conditions Ochorowicz conducted some forty experiments in which he stated that a large proportion of orders mentally conveyed were executed by the subject with more or less exactness.

It appears that the experiments were conducted with physician and patient in the same room, although Ochorowicz states that he was several yards distant from Mrs. M. and outside of her field of vision. His first test he found very rewarding, for while he pretended to be writing he inwardly was concentrating his thought upon an order that he was mentally giving her.

"Lift the right hand !	1st minute : no action.
I watch the patient, looking through the fingers of my left hand on which my forehead rested.	2nd minute : agitation in the right hand.
	3rd minute : agitation increases, patient frowns and raises the right hand."

(12, p. 62)

Another experiment five days later gives a clear idea of the responses made by Mrs. M. to the mental commands issued by Ochorowicz :[1]

"Rise, go to the piano, take a box of matches, bring it to me, light a match, go back to your place !	She rises with difficulty.
	Comes near me.
Go to the piano !	Goes to the piano, but passes beyond.
Come back !	Turns back.
Still farther !	Goes toward the door.
I stop her with my hand.	Returns to the piano.
	Seeks too high.
Lower !	No result.
Lower !	Lowers her hand.
Take the match-box !	Touches the box, then retreats.
Take the match-box !	Touches it again, and takes it.
Come to me !	Comes to me.
Light !	Wants to pass the match-box to me.
Light !	Takes out a match.

[1] For a detailed account of this case see Ochorowicz (12, pp. 60 ff.).

Light !	Lights it.
Go back to your place !	Returns to her place.
Bring the right hand to my lips.	Her right hand stirs.
Raise it !	No result.
Raise it !	Raises the hand.
Give it to be kissed !	Brings the right hand to her face ; removes her cravat.
Not that ! To my mouth !	Brings her right hand near my head.
To the lips !	Brings it to my lips."

(pp. 66-67)

Apart from these actual experiments in alleged thought. transmission, it seemed to Ochorowicz that now and then Mrs. M. was aware of what was passing in his own mind, although from his accounts it does not appear to be at all certain that this knowledge was acquired by telepathy and not a deduction from various observations which the patient made of her physician's attitude at the time. For example, on one occasion Ochorowicz found himself short of money because his treatment of Mrs. M., to whom he charged no fees, was taking up so much time, but he felt himself unable to discontinue treatment on account of her serious condition. During this period, she one day became thoughtful and then said to herself: " He is in trouble ; he must be helped ; but if I am awakened I shall forget all. What shall I do ? " She then reflected for a moment and took off a ring from her finger, which was customary with her when she wanted to remember something. Ochorowicz silently willed her not to remember it, but Mrs. M. replied that if she wanted to do so he would not prevent her. Ochorowicz put her into a deeper sleep and again ordered her to forget and when she was awakened she examined the ring but could not remember anything (pp. 69-70).

Ochorowicz concluded his report by stating that for him these experiments were decisive. He was convinced that they demonstrated true mental suggestion and that all possible sources of error had been excluded. Generally speaking, he claimed that the experiments under favourable conditions were always successful and certainly from the account that he gave of them they must be considered impressive. How far this impression might be modified were we to possess greater details on the exact conditions of each experiment it is now impossible to say. From Ochorowicz's own account it does not seem that he himself endeavoured to tighten up the conditions. For example, he did not make it impossible for Mrs. M. to see him at all by placing either her or himself behind a

screen, or attempting similar experiments when they were in different rooms.

In Chapter IV Ochorowicz described the famous series of experiments conducted in Le Havre in 1885 in which both French and English investigators collaborated in the investigation of Léonie, but since this is a French case it does not concern us here. There is no doubt that these experiments impressed Ochorowicz. Referring to them he wrote :

> " I left Havre with a profound emotion. I had at last witnessed the extraordinary phenomenon of action from a distance, which upsets all the opinions currently received. I summoned up my recollections, I questioned my notes a hundred times, to make sure of the reality of what I had just witnessed. I examined the facts from the skeptic's point of view, if perchance they might be pure accidence and coincidence, then from the point of view of the magnetizer . . . and I came to the conclusion that leaving out the first three experiments, which were inconclusive, the fourth stands and cannot be explained save by *a causal connection between an act of will and an effect produced at a distance*. . . . Now, with regard to the action from a distance in this case, I was but a passive observer, and therefore I must have my reserves upon the matter. I have, however, verified mental suggestion from anear, but *I saw only one* experiment from a distance that to me seemed to meet all the requirements " (pp. 96-97).

In the second part of his work, Ochorowicz attempted to analyse the various phenomena related to the central problem, namely :

A. Physical nervous transmission of diseases.
B. Transmission of emotive states.
C. Transmission of sensations.
D. Transmission of ideas.
E. Transmission of will.

Having examined each of these separately he then approached the phenomena of mental suggestion proper, firstly the so-called deferred action, i.e. when the suggested order is supposed to be performed at a later time, and finally suggestion at a distance.

It has already been seen that Ochorowicz was still inclined to believe that in magnetism, unlike hypnotism, certain physical effects were to be noticed and in his treatment of certain patients he thought he found confirmation of his beliefs. He ventured a suggestion that certain ailments manifest themselves on the surface of the body and even at a certain distance from it, so that the operator took on himself what an old magnetizer called " the emanations of the patients ". Although Ochorowicz rejected the concept of a fluid, he felt

compelled to believe in what he vaguely described as a " certain physical action " (p. 118).

These opinions were strengthened by some experiments that he made with Count de P., whom he was unable to magnetize but who believed that during Ochorowicz's attempts he experienced several very definite sensations. Although Ochorowicz said nothing, he himself had a very peculiar sensation in his hands, which he had never observed before. It was like a breath of cool air and was very distinctly felt when his hand was above that of his patient at the distance of a few centimetres, or even when he passed his hand above and over his body. Now and then it was so distinct that it was as if someone were blowing on his fingers and at one stage the count exclaimed " Oh, what a funny current ! " (p. 119).

This experience interested Ochorowicz and he showed that it was more or less independent of the actual temperature prevailing. For example, one of Ochorowicz's patients, who was highly anaemic, found his hand hot when it was almost numb with cold, while she gave him a sensation of cold in spite of the heat of his skin. Another patient gave him the same sensation and another suffering from tuberculosis " caused me the sensation of a cool draught, but only from the level of the lungs ; and an ataxic patient had a cold sensation in the left side, a hot in the right. The magnet produced exactly the same effect (without any distinction of poles), whereas I felt nothing. Finally, in other ataxic patients the case was reversed : they felt nothing, while I had a very clear sensation on one side, for one leg of the patient *drew*, as it were, a current of air from my hands . . ." (p. 120).

In another case Ochorowicz was treating a tubercular patient, whose fulgurant pains lasted for hours and would only subside under the imposition of hands. This treatment much fatigued Ochorowicz and he had not only a general sense of exhaustion, but the following morning and sometimes in the night he himself experienced peculiar pains which, although pretty sharp and not persistent, seemed superficial. It was as if they were " an *echo* of the fulgurant pain of the patient " (p. 135).

These phenomena of nervous contagion Ochorowicz considered to be the " first stage in mental transmission ". Organic states, Ochorowicz thought, could be transmitted from one individual to another and hence thought-transmission was only a question of degree. With regard to actual experiments in thought-transference, the experiments in England were well known to Ochorowicz, but his own tests in the transmission of drawings were much less striking

and he came to the conclusion that there were great individual differences not only among percipients but also among agents.

"But one fact specially worthy of attention, and one positive result of my experiments, is, that successes come by series—that is to say, there are fluctuations in the state of the subject which either help or hinder transmission. These series are perhaps more constant in somnambulism than in the waking state, but the principle of sympathetic impressibility is ever the same. If there is to be transmission the brain ought not to be too torpid (aideia), not too distracted (polyideia) nor too absorbed in its own thoughts (active monoideia) ; it ought, on the contrary, to be passive, *but capable of functioning with absorption* (passive nascent monoideia). The nearer the momentary state comes to this limit the better is the chance of successful transmission" (p. 163).

Continuing his discussion of the relationship between the operator and the subject, Ochorowicz returned to his conception of what constituted *rapport*, but his observations in this field do not concern us here, since they have little relevance to paranormal phenomena alleged to occur in the magnetic trance and Ochorowicz seems to have had no adequate appreciation of the effects of suggestion, to which Braid had called attention at a much earlier period.

There is no doubt that in his attempted explanations of thought-transmission Ochorowicz was much influenced by the emphasis that he continued to lay on some alleged physical action in animal magnetism. Moreover, he attempted to combine his own theories with those of the physiologists of the period, such as the British physiologist and neurologist Charles E. Brown-Séquard whose theories of nerve-force he thought contained errors as well as truths. According to Ochorowicz his thought did not act upon the muscles of the subject, but it might act upon his brain and might possibly produce molecular changes and "here, as elsewhere, energy is transmitted and transformed" (p. 332).

Since Ochorowicz fully accepted the reality of mental suggestion and thought-transmission, he then considered whether from the point of view of the practising physician it had any theoretical or practical application. Amongst theoretical applications he considered that this "psycho-physical transmission" might be able to account for :

"1. certain cases of instinctive appreciation of diseases ;
2. certain cases of direct nervic contagion ;
3. certain illusions of observers that have not guarded against a mental influence ;

4. certain cases of alleged second-sight ;
5. certain phenomena of veridical hallucination, hard to believe, but in some instances well attested ;
6. communication of certain sensations in the dreams of normal sleep ;
7. the alleged divinations of ' rapping spirits ' ;
8. the mysterious influence of certain personages ;
9. the difference between one ' hypnotizer ' and another ;
10. sundry facts recorded in the history of civilization and credited to demons, oracles, sorcerers, obsessed persons, etc." (p. 348).

Finally, he attempted to answer a question which presented itself to many other critical observers of the period when they considered the phenomena of the transmission of thought apart from the so-called normal channels of sense. Would the acceptance of such phenomena, he asked, not be " simply a revival of occultism and magic ? . . . No ; mental suggestion does not favor occultism, on the contrary it banishes it. And once recognized, once regenerated by positive science, it will interpret to us, in language more forceful and more worthy of our age, the mysterious echo of ancient truths " (pp. 349-350).

Minor Researchers in Hypnotism

Apart from Julian Ochorowicz there were a number of Polish physicians and scientific men who were interested in hypnotism and had achieved a certain reputation in that field, namely E. Biernacki, N. Cybulski, Orlowski, A. Raciborski, L. Rzecziowski, K. Sosnowski, Szokalski and M. Stefanowska. Since the political and cultural situation in Poland, as has been mentioned before, was not favourable to independent scientific pursuits of any kind, most of them conducted much of their research abroad and it was also outside Poland, mainly in France, that their works were published. They considered hypnotism a scientific phenomenon deserving investigation but, unlike Ochorowicz, regarded the alleged magnetic phenomena as either illusory or erroneously interpreted. Like Ochorowicz himself, they considered themselves " positivists " but, unlike him, they rejected even the possibility of paranormal phenomena.

Biernacki and Stefanowska devoted themselves mainly to the subject of hypnosis in animals and, following the Russian physiologist V. I. Danilevski, experimented a great deal with frogs, publishing their results in various French journals as well as in *Przeglad Lekarski* in Cracow.

It was, however, only Dr. Nepomucen Cybulski whose research on hypnotism achieved some noteworthy results and who, in 1887, contributed a long series of articles on hypnotism from a physiological standpoint in *Przeglad Lekarski* (Vol. XXVI, pp. 273 ff., etc.) which was later published in book form (14). As the title indicates, Cybulski's approach is based entirely on physiology and consequently abundant references will be found to such writers as I. R. Tarkhanov, J. A. Sikorski and I. Sechenov and other workers in Russia with whom he remained in touch when staying there. Among foreign writers he referred to R. Heidenhain and W. Preyer, together with French hypnotists such as J. M. Charcot, H. Bernheim and A. A. Liébeault. Of the large number of British contributors to this field he mentioned only W. B. Carpenter.[1]

Like others in Poland, Cybulski denied the existence of *rapport* as well as other magnetic phenomena, the importance of which had been stressed by Ochorowicz. Indeed, he wrote, no such phenomena were in evidence during his experiments in St. Petersburg and Cracow. He did not accept mental suggestion, since he maintained that all such phenomena could be explained through hyperaesthesia of the senses, a condition which physiology was well acquainted with and for which there was therefore no need to invoke the paranormal. In his opinion, however, autosuggestion deserved a more thorough investigation than it had yet received. He made a series of experiments with various subjects and discovered that certain of them were capable of carrying out post-hypnotic suggestions given by themselves before going into the hypnotic state and thus produced by their own will. With one of his subjects, Mr. K., Cybulski stated that these suggestions were as effective as if he had given them himself. The results of these experiments led him to conclude that the post-hypnotic state was not normal and he contributed an account of his work in a German physiological journal (15).

Cybulski, following the Salpêtrière school, considered that hypnosis itself was not a normal state and that the first stages of giving orders to a hypnotized subject were similar to the formation of *Zwangsvorstellungen* (compulsive ideas) in the first stages of mental illness. He was of the opinion that the condition of a person in whom consciousness, in one sense at least, could be so easily

[1] This may possibly be due to the fact that many of those working in Britain were reporting certain paranormal aspects of the hypnotic state instead of rejecting these completely as was common among numbers of French, Russian and German hypnotists.

suspended, could not be called normal and he disagreed with other experimenters who stated that it was possible to produce hypnosis in entirely healthy persons. In his view, the hypnotic state should be regarded as some sort of nervous disturbance and he denied there was any possibility of hypnotism playing any significant part in therapy ; he admitted, however, that it might be used as a substitute for narcotics, even though more dangerous than chloroform.

Cybulski's attitude on the subject of hypnotism generally may be regarded as more or less identical with the opinion that Charcot expressed in 1887 (16), namely that hypnosis was not as harmless as some people attempted to prove and that the hypnotic state was so similar to hysteria that under certain conditions it became as contagious as hysteria itself.

Before closing this account of hypnotism in Poland, one further writer deserves mention, namely Czesław L. Czysńki (1858-1932), who at one time was an associate of the British Society for Psychical Research and who, besides being the author of a number of works on occultism, contributed his opinions on magnetism and hypnotism in a book (17) published in Cracow in 1889. His work, however, has little to recommend it from a scientific point of view and he did not attempt personally to make any original experiments. Moreover, as he himself admitted, most of his work was based on materials supplied by other writers and his attitude towards paranormal phenomena was influenced not only by his own uncritical faith in results derived from occultism, but also by the confidence he had in his own mediumistic powers and in his alleged gift of prophecy. His personal record is questionable, since he was involved in a major scandal involving the young German Baroness von Zedlitz auf Luga, which ended in his being convicted by a court in Munich and sentenced to three years imprisonment.[1]

Although Czyński was not regarded with favour by physicians and others who were seriously interested in hypnotism, his work was defended by others, especially by the famous occultist Papus (Gérard Encausse) who had met him during his work at a French hospital. Papus wrote a preface to his book (18) on political prophecies and said that no calumnies, persecutions or hateful attacks caused by envy would stop his dedicated work. As a clairvoyant he had amazed many sceptical observers and had shown great

[1] For the Czyński case see H. Grashey [and others] *Der Prozess Czyński* (Stuttgart, 1895) ; A. Moll, *Hypnotism* (London and Felling-on-Tyne, 1909, pp. 406-407) ; H. E. Hammerschlag, *Hypnotism and Crime* (London, 1956, pp. 34-48).

abilities as an experimenter. He was both a prophet and a medium, although he met with nothing but ingratitude, and the possession of these two qualities caused all his misfortunes. But, Papus concluded, this courageous man would withstand all the storms and everyone must salute the truth of his astral vision. It need not be said that this extravagant tribute from the French occultist is hardly convincing enough to confirm Czyński's paranormal gifts. If he were gifted at all it was in creating a halo around himself, which some may think is often the best way of becoming discredited.

Conclusions

With the scanty material at our disposal, it seems hardly possible to detect any general traits in the development of mesmerism, magnetism and hypnotism in Poland and as regards experiments on paranormal phenomena occurring in the trance there are hardly any except those reported by Ochorowicz. Indeed, there is a striking absence in Poland in the late nineteenth century of any serious researchers, or, perhaps, any researchers at all, who studied paranormal phenomena in general and those of the magnetic trance in particular, in spite of the fact that it was precisely at this time that controversy was being carried on with regard to these matters in Russia, England, France and Germany. One reason for this was that Poland in the eighties and nineties had been influenced by the contemporary trend in positivist philosophy which was common in intellectual circles and among medical and scientific bodies. These in particular would not in any way associate themselves with what they regarded as the extravagant claims of psychical research. Another part of the explanation has to be looked for elsewhere, namely in the general character of the country which, as late as the end of the nineteenth century, existed in an atmosphere of primitive beliefs, magic and superstition, very similar to that existing in Russia at the same time. It should be remembered that illiteracy in Poland was at this time considerably higher than that in Western countries (although lower than in Russia) and even the comparatively small numbers of the educated classes were largely drawn from the so-called landed gentry who were never noted for enlightened thinking. What else, then, could be expected in a country where the only secondary schools with college entrance privileges were under strict Russian or German rule and as such were boycotted by patriotically minded people, so that many students who wanted a college education had either to go abroad

or to Galicia which was the part of Poland under Austrian rule, with a regime more liberal than that in the Russian and German regions, and with the two Polish universities, in Cracow and in Lemberg.

It should also be remembered, when analysing the reasons why Poland's contributions to research on magnetism and hypnotism were so negligible, that the Poles had always been devout Roman Catholics and, without risking far-fetched generalizations or going beyond the scope of this project, it seems relevant to point out that the countries where Roman Catholicism is flourishing do not present a favourable ground for the development of parapsychology.

It is, perhaps, permissible to point out that soon after the recovery of Polish political independence in 1918 an institute for the study of parapsychology was established in Warsaw with immediate recognition and support from similar societies in the West, while the investigations of Polish mediums was vigorously carried on and a long series of reports published. All these activities, however, suddenly ceased in 1939 and have not been resumed since on any considerable scale.

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Hypnotism in Italy

by
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Translated from the Italian by
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" The ordinary of each diocese must . . . do his utmost to avert the abuses of magnetism, and to bring it to an end, so that the Lord's flock may be preserved from the attacks of the enemy, that the faith may be maintained in its integrity, and that the faithful committed to their care may be saved from the corruption of morals."

CARDINAL V. MACCHI, 1856.

Introduction

Italy, like other countries in which the influence of the Roman Catholic Church was strong, was not initially favourable to the development of studies in mesmerism. The hypnotic state seemed so curious and was so little understood and the phenomena associated with it were sometimes of so unusual a character that the whole subject was regarded with aversion and fear by ecclesiastical persons. Medical men also were unwilling to be closely associated with it lest on the one hand they should offend the Church and on the other their more orthodox colleagues.

With the passing of the years, however, the whole subject became better known through the stage performances of travelling hypnotists, who became very popular in Italy and whose shows began to persuade medical men interested in psychology that a more objective study of the subject was desirable. As in other countries, the old mesmeric theories gradually lost their force and the subject became of interest on account of its therapeutic value, although a few enquirers like Morselli and Lombroso were inclined to the belief that paranormal phenomena were occasionally to be observed.

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Hypnotism in Italy 1800-1900

Introduction and Development of Hypnotism in Italy

Italy was initially unfavourable ground for the development of the theory and practical applications of animal magnetism, either on account of the generally negative approach of the various local authorities, the hostility of academic circles or of the many reservations made by the Roman Catholic Church.

In Naples under the reign of the Bourbons magnetism was prohibited, so that those who practised it, among whom were Dr. Alfredo Rubino at Naples and Professor Vincenzo Cervello at Palermo, were obliged to make use of it almost in secret. In Rome the government of Pius IX (1792-1878), hardly making any distinctions, as we shall see, did not permit the employment of magnetism : a few works on animal magnetism were placed on the Index, such as *Le Magnétiseur Spiritualiste* in the edition of the I.L.P. in 1851 and Guidi's *Trattato Teorico Pratico di Magnetismo Animale* (1854) which was still there in 1929, and for the most part public experiments carried out by serious magnetizers were prohibited.

In Lombardy magnetism came under the direct control of the Austrian police ; after the imperial decree of 18 October 1845 its practice was permitted only to medical men who, with a few exceptions such as C. Dugnani, Danzi and Vandoni, regarded it with almost complete indifference.

In this part of Italy, however, several valuable books on magnetism were published and it was actually in Milan that the first scientific review devoted to this question was published ; this was entitled *Cronaca del Magnetismo Animale* (1853) and edited by Giuseppe Terzaghi, but lasted for only a year.

The neighbouring duchies, together with Tuscany, came under the influence of the imperial decree, with the exception of Parma where Count Jacopo San Vitale was active in his operations.

Piedmont was the only Italian state where magnetism could be studied and applied in an atmosphere of great tolerance. Among the numerous magnetizers who operated in Piedmont may be noted Drs. C. Borgna, L. Coddè, P. Gatti and C. Peano and later Francesco Guidi who was among the most active.

Although every province of Italy finally had numerous and sometimes serious practitioners of magnetism, there is no doubt that, on account of the difficulties met with, the spread of mesmerism in Italy was somewhat retarded. This is proved by a conference held in Florence in 1896 in which Angelo Mosso (1846-1910) stated (1, p. 60) that, after bibliographical research and study of archives, he had succeeded in discovering only one work (2) published in 1784 by Giraud[1], a physician in Turin, which related to the therapeutic applications of animal magnetism.

Among the first Italian exponents of the theory of Mesmer were Giovanni Malfatti of Lucca, who in his writings attempted to reconcile magnetism with the theory of " nature-philosophy ", followed by Giuseppe Pungileoni, author of two books (3, 4) on somnambulism, and also by Giuseppe Saverio Poli, who in 1815 published at Naples a short treatise (5) on the magnet and its medicinal virtues.

It may almost be said that until the end of the first half of the nineteenth century the influence of mesmerism in Italy was very slight, because its supporters did not dare to publish their studies or their material in the unfavourable atmosphere that had been created in both the political and religious fields. The theory of animal magnetism which the *Civiltà Cattolica*, in G. Brunengo's review (6) of a book (7) on the cause of mesmeric phenomena, stated "affects all the sacred interests of religion and morality " (p. 589) and " so to speak, stands on the boundaries of the natural and supernatural ", could not, indeed, escape the vigilance of the Church which repeatedly made known its opinions about it in letters replying to requests for guidance from perplexed bishops. These replies, without giving a definitive judgment on the nature of mesmerism, contained, as *La Civiltà Cattolica* mentioned in the same volume, for " those who can interpret correctly, the true meaning of the speculative question and the sure principle which, philosophically and fruitfully treated, may lead to its solution " (pp. 589-590).

In a first letter of 23 June 1840, the Holy See, represented by the Congregation of the Holy Office, announced definitively that the

[1] This letter was probably by Sebastiano Giraud who in June of the same year was corresponding with Mesmer on matters connected with the methods used by mesmerizers etc.

fact of using lawful physical means is not morally forbidden provided that it does not lead to illegal ends and is not " *explicita, aut implicita daemonis invocatione* " (8, p. 537). The next year the following question was submitted to the Holy See : " Seeing that in magnetic operations there appears to be an occurrence leading to unbelief and bad customs, it is desired to know, in order to preserve a quiet conscience, the opinion of the Holy See relating to this matter ". The same tribunal of the Congregation of the Holy Office in a letter of 21 April 1841, replied that the use of magnetism " *prout exponitur, non licere* " (according to this exposition, is not permitted) (8, p. 538). In the same year the Bishop of Lausanne and Geneva appealed to the Apostolic Penitentiary for a decisive ruling on the methods used by the magnetizers (passes, manipulations of the body of the magnetized person, especially if of the feminine sex), mesmeric phenomena and the use and applications in therapeutics. The Apostolic Penitentiary confirmed in a letter of 1 July 1841 the reply previously given by the Congregation of the Holy Office.

In 1842 the Archbishop of Rheims consulted the Holy See, insisting on knowing if magnetism was permitted, not in particular cases but in general, so as to have a complete reply on the merits of the question. Cardinal Castruccio Castracane degli Antellminelli, the Chief Penitentiary, wrote to him (2 September 1843) that " the question would perhaps never be decided " (9, p. 206). The Church therefore did not clearly express either approval or condemnation of mesmerism, but only limited the use of it ; consequently magnetism would not be forbidden " when it is not used for illicit purposes or *invocatione daemonis* or in any manner designed to obtain supernatural effects " (8, p. 539).

Serious difficulties in interpretation arose moreover in deciding what was to be understood by " physical means " used in magnetizing, whether, that is to say, these should refer to " passes " alone or also to the exercise of the will ; if passes alone were to be considered and the effects of these were disproportionate to their cause, then the theologians would be constrained to think of an implicit " demonic invocation ". The meeting together of the wills could, however, be a true " physical influence ". However, while admitting the meeting of the wills, it is not clear what is meant by the disproportion that exists between the cause and the effects which the theologians ascribe to an implicit superstition (8, pp. 539 ff.).

Such assertions, however, seem to be clearly in the theoretical field whilst from the replies of the Roman Catholic Church we cannot extract any decisive judgments and hence no practical applications

can be drawn from them. All these precautions by the Holy Roman Inquisition, on the other hand, indicate the growing interest which was spreading throughout Italy through the use of magnetism and the problems involved in it.

It was just at this period that various authors began to deal with this matter under the influence of French and English publications. In 1840 in Milan news was released of the former magnetic séances attended by the celebrated French novelist Honoré de Balzac, which were referred to by Giovanni Rajberti (1805-61), the well known author if *Il Gatto* (Milano, 1845), in his book *Il volgo e la medicina* (10) in which he criticizes the doctrine of homeopathy and defines animal magnetism as " one of so many systematized deliriums which distinguish the deviations of the human reason ".

In a chapter in the same book (pp. 171-173), entitled " L'uomo grande e il nano ", a report is referred to concerning a magnetic experiment in which he himself was a spectator. Balzac, in the summer of 1838, when he was the guest of a Milanese family, wanted to exhibit his magnetic powers on a valet. Rajberti writes:—" Scowling in a frightful way like one possessed, he pointed at him, making waving passes with his hands, sweating and panting on account of the intense concentration of mind and body in this work ", but in vain. The attempt was then repeated on a subject better adapted to the process, namely a certain Gattino, a dwarf and hunchback, but with the same lack of success. After repeated attempts, however, Gattino began to show a more stupid expression than usual, to gape with rounded mouth and to droop his eyelids more and more slowly in a gloomy silence.

Balzac, irritated by the lack of attention paid by Rajberti, who at this time was reading a book, stamped on the floor ; Rajberti then hastened to ask the dwarf " more awake than ever " if he had slept, but he replied that he was about to go to sleep. A few words were sufficient to awaken him completely and the magnetizer had no further success. Balzac was no longer heard to speak of magnetism.[1]

In 1842 there was published in Corfù a book (11) on facts relating to mesmerism by Angelo Cogevina, a physician and surgeon and superintendent of the Civil Hospital at Corfù, and Francesco Orioli, a professor at the university and director of the Ionian College and a corresponding member of the Institute at Florence and of many scientific academies in Europe. In this book were reported several cases treated with magnetic therapy.

[1] For Balzac's interest in occultism see A. Cabanès, *Balzac ignoré* (Paris, 1899), pp. 65-80.

The phenomena of magnetism, indeed, were beginning to be much heard of, and were exciting great interest and, attracted by the novelty, there were many who actively or passively supported the practice of mesmerism in its various forms and manifestations, with a consequently increased production of publications on the matter.

In 1847 the Holy Office intervened again, with the decree of 28 July in which it expressed itself in the following terms : " When free from all errors, sorcery, explicit or implicit invocation of demons, the use of magnetism, that is to say solely as a method of serving physical ends that are otherwise lawful, is not morally forbidden, provided that it is not directed to an unlawful purpose or in any evil way whatever.

" The application, then, of principles and methods that are entirely physical to matters and effects that are truly supernatural in order to explain these physically is a sin that is altogether illicit and heretical " (8, p. 563).

On account of this decree the reading and distribution of a certain number of books on magnetism was forbidden. Animal magnetism in Italy, however, was the subject of numerous studies by respectable persons such as physicians, scholars and literary men, but at the same time it was also practised by unscrupulous persons so that side by side with objective works of a certain scientific value there flourished other publications that were superficial, biased and of little worth or were exclusively inspired by controversial aims.

Interest in magnetism was naturally greater among physicians on account of the possible therapeutic attraction which this doctrine seemed able to offer. Thus for example, Dr. C. A. Calderini, at first sceptical of Mesmer's theory, was converted to it after having been present at the public performances given at Milan in 1850 by the celebrated magnetizer Auguste Lassaigne, the husband of the famous French somnambule Prudence Bernard. With the co-operation of several physicians in that city he submitted to accurate analysis a series of magnetic phenomena (12). Following his example, Dr. Pietro Beroaldi, Director of the Civil Hospital of Vicenza, carried out various experiments and analysed a series of mesmeric phenomena in the same hospital in 1851 (13).[1]

The sympathizers and followers increased and various magnetic societies flourished in imitation of those already existing at that time in France and abroad, with which they maintained contact ; magnetic sittings also increased and also theoretical and practical courses in magnetism.

[1] For a fuller account see pp. 153 ff.

The first magnetic society in Italy was the Società Bio-Magnetica, founded in Genoa in 1853 by Giacomo Ricci. In 1855 there was founded in Turin the Società Filomagnetica by Francesco Guidi who in 1856 published in Turin the journal *Luce Magnetica* of which he was director and editor. In 1856 Pietro D'Amico founded at Bologna the Società Magnetica d'Italia of which D'Amico was president and which had amongst its members Victor Hugo, Bargoni the Minister of Public Education, Professor A. Palagi the Director of the Observatory of the University of Bologna, etc.

A magnetizer of national fame often felt the need to have at his disposition his own paper for the support and propaganda of his claims. Thus there flourished numerous mesmeric reviews, which generally had a short life. In Turin, for example, there were *Il Magnetofilo* (1854-5) continued as *Il Mesmerista*, the previously mentioned *Luce Magnetica* and *Il Magnetologo* of Guidi. At Genoa there appeared *La Salute* (1865), directed by D'Amico, the organ of the Società Magnetica of Bologna. There arose, moreover, for social gatherings and study, magnetic circles, magnetic academies, athenaeums and magnetic hospitals. Examples of these are the Circolo Magnetico and the Istituzione di Beneficenza Mesmerica directed by Borgna and Guidi at Turin.

Francesco Guidi was certainly one of the most active exponents of Italian mesmerism. In 1851, with the enthusiasm of a neophyte, he wrote his first book (9) issued in Turin in which he showed his faith and his hope for the success of animal magnetism, expounding the advantages to be derived from it and examining the therapeutic, psychological, moral and social aspects. In 1852 he again published at Turin a translation (14) together with personal notes, of a French book by L. M. Hébert (15). To Guidi we owe the Italian works of the type then prevalent regarding mesmerism. In his numerous works the author had recourse not only to a small group of sympathizers, but indicated his clear desire to obtain converts. In 1854 there appeared at Milan a treatise (16) on the theoretical and practical aspects of animal magnetism, in which he expressed in ten lessons the course in mesmerism which he had held in various Italian cities, followed by other works. Mesmerism, which at first was the privilege of the nobility and the moneyed middle class, was in this way popularized and brought to the knowledge of the majority and this was perhaps the reason why works on it were placed on the Index. Guidi had to wage a hard struggle on two fronts : on the one hand he was attacked by alleged magnetizers with few scruples, such as Zanardelli, G. Demarchi, P. C. Demaris, Ruatti, G.

Pertusio, B. Fenoglio, L. Berrutti, Guastalla, etc., whom he tried repeatedly to expose : on the other hand he was attacked by the Medical Council of Turin which requested from the local government repressive laws against the magnetizers. Guidi in consequence began, in contrast to some of his colleagues, to avoid major dissentions and resigned from the Society that he himself had founded and which in a short time ceased to exist.

On the occasion of the anniversary of the birth of Mesmer, namely 23 May 1855, Guidi founded the Società Mesmerica d'Istruzione, Propaganda e Beneficenza, modelled on that of the Mesmeric Infirmary in London.[1] After a few months of life this institution seems to have brought satisfactory results to the poor patients who came there and would perhaps have had a more prosperous future if it had been financially supported. Later Guidi left Piedmont for Savoy, Switzerland, France and later Milan, where he founded an Istituto Zoomagnetico di Propaganda ed Istruzione in which magnetic and somnambulistic cures were practised.

The Rise and Decline of Interest

In the second half of the nineteenth century there was a growing interest in mesmeric practices. Contemporary with Guidi, Cogevina, Orioli and Terzaghi may be noted other magnetizers, such as Jacopo San Vitale, famed as the Nestor of Italian magnetizers, Pietro Gatti, the first exponent of animal magnetism in Genoa, C. Dugnani, the first Italian to have a medal of honour from the Magnetic Jury of Encouragement and Reward[2] in Paris in 1850, Pietro D'Amico, considered by many to have been the first true magnetizer in Italy, M. Poeti, Bonajuti, Butti, Consoni, Danzi, Vandoni, A. Berti, besides many others who exhibited for the most part in the theatres.

Notwithstanding the repeated declarations of the more serious practitioners of mesmerism on the scientific, positive and natural character of the new doctrine, not a few persons sought or hoped to

[1] The London Mesmeric Infirmary was founded in January 1846 at the house of Henry G. F. Moreton, second Earl of Ducie (1802-1853), who was Lord-in-waiting to the Queen. Four years later the committee sent out a notice to all donors and subscribers that the house was open to receive patients. Two male mesmerists and one female were appointed and a number of striking cures were reported, and in 1851 the Archbishop of Dublin and the fifth Earl Stanhope became Vice-Presidents. [*Ed.*]

[2] Jury Magnêtique d'Encouragement et Récompense, founded in 1846.

find in magnetic sittings a satisfaction for their curiosity, together with occult and mysterious phenomena passing beyond normal limits into those of the supernatural.

It must be recorded that at this period, above all in America and England, there was an increasing interest in Spiritualism which specifically aimed at contact with the world of the Beyond. Some of the participants in magnetic sittings hoped likewise and certainly such hopes were further stimulated by the repeated declarations of the magnetizers that they were ignorant of the exact causes that influenced their magnetic phenomena.

This confusion between the scientific doctrine and the spiritistic practice was the cause of a strong opposition by the Church towards animal magnetism, both at the beginning and in the course of its gradual and slow acceptance in the scientific field and in its therapeutic applications. It must also be remembered that magnetic phenomena were sometimes misused for purposes of gain by magnetizers who in appropriate shows had the sole purpose of presenting entertainments and marvels to the public.

Thus it happened that the true magnetizers, or, as Guidi himself defined them, the " magnetizers of good faith ", also came to be accused of a lack of scientific seriousness and such criticism threatened to compromise their positive achievements.

With the spread of mesmerism in Italy, there was an increase not only in its supporters but also in its opponents, its difficulties, deceptions and religious and moral problems.

In July 1856 an Encyclical of the Holy Office, signed by Cardinal Vincenzo Macchi, was sent to all its Christian bishops and put them on guard against the dangers of the abuse of magnetic phenomena, making a distinction between what was in the domain of scientific research and what was mere curiosity about supernatural phenomena, both superstitious and often immoral (see 8, p. 568 ; 17, pp. 382 ff.)

Conflicting ideas however, often arose between mesmerists themselves who found themselves harmed by competition. Such internal conflicts certainly did nothing to help the progress of the science and offered an easy target to the adversaries of mesmerism. L. Stefanoni in his book (18) published in 1890, wishing to draw up a critical account of the material, gave a documented report of a series of facts that had led the author to radically negative conclusions on the existence of magnetism and magnetic phenomena. The numerous incidents reported, including those by the major representatives of magnetism, such as F. Guidi, P. D'Amico, Pilati and

A. Zanardelli, in fact left the reader somewhat perplexed about the authenticity of many of the alleged cures effected by a number of mesmerists, while tending to exclude completely the genuine production of almost all the paranormal phenomena reported by the authors quoted and condemned by Stefanoni as clever mystifications. For example, in Chapter 8 of his book (18, p. 217 ff.) he gives a long account of codes as described by Emilio Roncaglia (45) who at that time was describing such experiments in much the same way as Gandon was doing in France.

In 1868 it appears that in Ancona an acrimonious controversy broke out between Antonio Zanardelli, who was known to be a magnetizer of the old school, and the conjurer Francesco Castagnola. The latter attempted to duplicate the magnetic phenomena exhibited by Zanardelli's subject which was followed by further newspaper publicity, the *Corriere delle Marche* publishing letters on both sides. Castagnola endeavoured to bring the matter to a head by offering a prize of L.500 to any magnetizer who, either in public or private, was able to demonstrate at least two of the magnetic phenomena in question, namely thought-transference and clairvoyance (18, pp. 150-153).

Prizes continued to be offered ranging from L.1000 to L.3000 but were not claimed.

We shall confine ourselves here to examining in detail the principal experiments carried out in Italy in which it would seem that parapsychological phenomena may have been verified. At the same time an attempt has been made to distinguish genuine magnetic phenomena as compared with all those supposed to be such and based primarily on the belief of others. It is not surprising that the latter were characterized by their more sensational telepathic and clairvoyant aspects, etc. to which the attention and curiosity of the spectators and the hope of the magnetizers were mainly directed. A great part of the experiments in divination, vision at a distance, retrovision, prevision, not to speak of the so-called " transcendental magnetism " with its voices, dreams, apparitions and prophecies, celestial visions and evocations of the spirits, the reading and transmission of thoughts and clairvoyance, when submitted to accurate control proved for the most part not to be supernormal.

Just as the Burdin prize of 3,000 francs set up in France in 1837[1] and offered to a person who could demonstrate eyeless-vision remained without successful competitors, so did a similar fate befall the

[1] This was the prize offered on 5 September 1837 by M. C. Burdin to anyone " qui aura la faculté de lire sans les secours des yeux et de la lumière " (See 19).

other prizes offered in Italy, such as that of L.2,000 in 1869 arising from a challenge between the magnetizer D'Amico and Guidi in which it was a question of making a diagnosis of an unknown malady and the very important offer by Stefanoni in 1879 of L.3,000 to anyone who was capable by means of magnetism of producing the phenomena of clairvoyance, thought-transference and proofs of the existence of the magnetic fluid.

Stefanoni also seemed to be successful in demonstrating the falsity of the experiments conducted by magnetizers such as Pilati, the married couple Sisti and Castagnola, Astorre Monsagrati of Livorno, Antonio Banello of Udine, and B. Figari of Camogli. None of these, although continuing to give exhibitions on the theatrical stage and before curious crowds, had the courage to submit themselves to a serious scientific examination that might contribute to the progress of science by accurate experiments conducted in the presence of competent and cautious persons.

Thus, towards 1875, magnetism seemed to be starting its slow but sure decline. The stage with the usual performances was already beginning to attract less interest. The aspect of spiritism that from 1848 was confused with mesmerism still succeeded in keeping it alive, but the main centre of interest in magnetism, now gradually becoming better known as hypnotism, was slowly turning towards the cure of diseases, above all of hysteria, a field in which it notably influenced the concepts of both suggestion and auto-suggestion. At first, however, it sought to determine the true influences of the magnet on this type of illness.

Towards the end of 1866 Professor C. Maggiorani, director of the Clinica Neuropatica of Rome, was obtaining publicity on account of the " nervous crises " which he asserted he could produce in hysterical patients by means of the magnet and he published numerous works regarding this (20-22). His experiments, which may be considered as intermediate between those carried out by Braid and those by Charcot, were continued by his successor Ezio Sciamanna in collaboration with O. Parisotti.

In contrast to those who still believed in the power of the magnet, Dal Pozzo (23) in 1869 was speaking of radiations and wave movements, maintaining that thought could be transferred to another individual by means of vibrations, which activated the surrounding field, especially if the persons were in contact. Dal Pozzo considered the somnambulist condition as a " physiological state " that might be produced artificially especially in individuals of a nervous temperament and in either healthy or pathological conditions.

During this condition the " vital, organic and sensory functions would be disturbed by external actions which in their turn would produce inhibitory and dynamo-genetic effects in the organism ".

Various Italians had been present at the experiments at the Salpêtrière, among them being Dr. Domenico Miliotti, who made known Charcot's methods both by collecting and translating some of his lessons (24) and by articles in medical periodicals reporting Charcot's methods for producing the various forms of hypnosis. As a consequence, following the example set by Charcot and his pupils, the study and applications of hypnotism were introduced into Italian clinics (Cf. 25).

In Milan Edoardo Gonzales, the director of the Provincial Mental Hospital in Mombello, carried out hypnotic experiments on hysterical subjects in his institute. These he favoured, while he opposed all public demonstrations in theatres. In Padua Dr. Tebaldi, the psychiatrist and Professor of Neuro-pathology at the University, was also engaged in hypnotism and scientific contributions on hypnotism were also published by G. Seppilli and A. Tamburini (26).

Two of the most notable exponents of hypnotic phenomena in general were Lombroso and Morselli, both of whom were actively engaged in the Italian scientific world. Cesare Lombroso (1836-1909) author of the famous study *Genio e Follia* (27), Professor in ordinary of legal medicine, public hygiene, psychiatry and finally criminal anthropology in Turin, published various works on hypnotism of which he was a tenacious upholder (28-30). Lombroso also occupied himself extensively with mediumistic phenomena : in the Turin journal *Gazzetta Letteraria* of 1890 and later on various occasions some of his articles appeared on telepathy and other higher phenomena of mediumship and as an explanation he postulated the existence of powerful and obscure psycho-physical energies.

There remains his well-known experiences with the famous medium Eusapia Palladino, who later was exposed in fraud and in whom, on the other hand, he had had complete faith.

Although mainly remembered for his work in criminology, he made contributions to a number of other subjects as, for example, cretinism, pellagra and even the poisons arising from the use of maize. It was probably on account of his psychiatric work that his interest in crime arose and proceeding thence, he directed his attention to theories of criminal anthropology which, mainly on account of the enthusiasm of some of his pupils among whom

Enrico Ferri was the best known, made him appear to hold views which can hardly be fairly attributed to him. What, unfortunately, Lombroso lacked was his clear understanding of the nature of evidence in scientific work and he was also weak in his power of presenting his theories in logical sequence. The *British Medical Journal* (23 Oct. 1909, II, p. 1262) in his obituary noted many of these characteristics but on the other hand declared that he was " a shrewd observer ", a quality hardly apparent in his work on paranormal phenomena. As the review stated, " much of his work was fantastic and inaccurate ", but it must be admitted that he stimulated research in various fields and will long be remembered for his industry and versatility.

Enrico Morselli (1852-1929) the director of the Psychiatric Clinic at the University of Genoa, was probably the most serious student of hypnotic and mediumistic phenomena, which he observed closely for a long time and on which he published numerous works (e.g. 31-33).

The attitude of Morselli towards the higher phenomena of mediumship was not one of incredulity but of cautious experimentation : he did not yet consider it " scientifically confirmed ". For the explanation of hypnotic phenomena Morselli returned to the conception of experimental neurosis. According to this author, hypnotism is " a more or less profound artificial sleep in which certain regions of the brain remain paralysed while others are abnormally exalted ". From the contrast and the various combinations between the paralytic state of some parts and functions of the brain with the state of exaltation of other parts and nerve functions there would spring all the immensely varied and surprising phenomenology of magnetism, hypnotism and somnambulism, Braidism, fascination and other similar processes.

Like Lombroso, Vincenzo Cervello, a Professor of the University of Palermo, asserted that he had obtained phenomena of the transposition of the senses, divination of unknown objects and transmission of thought. Similarly, Professor Semmola of Naples confirmed the existence of such phenomena.

At this time (1886) great enthusiasm was aroused by the hypnotic shows of Zanardelli at Rome, of Rummo at Naples, of Giovanni Miroglio and various other hypnotizers of lesser fame. But the one who aroused the greatest interest was the Belgian Donato (A. E. d'Hont) who, after giving exhibitions in Belgium, Holland, France and Russia, organized spectacular public performances in Turin and Milan. During these performances, however, as also stated by

Morselli who studied him directly and M. Giordano (34), besides ordinary hypnotic phenomena he did not seem to arouse telepathic phenomena.[1]

These experiments let loose a veritable hypnotic " fever " whilst controversies became more acute and criticisms intensified. Indeed Dr. Gonzales of Milan described the enthusiasm aroused as a " hysterical epidemic ".

This did not fail to arouse serious alarms which led the Consiglio Superiore di Sanità in Rome to issue a decree on 27 June 1886 forbidding magnetic shows to be held in public. Lombroso, Gonzales, Tebaldi and Bossi all aligned themselves in favour of this decision although they were definitely in favour of magnetic practices (See 25 ; also 35, p. 105 and 36).

At the same sitting of the Consiglio in Rome it was admitted that hypnotic phenomena were scientifically proved, but the danger that might arise from uncontrolled public exhibitions was denounced. Thus public sittings were prohibited and Donato was forced to leave Italy for Argentina. Nevertheless, public sittings continued, although with some alterations in the programme, exciting an unchanged interest that was concentrated above all, as had been the case in earlier times, on those magnetic phenomena called " higher ", such as clairvoyance, telepathy, divination, etc.

Among those who claimed to succeed in producing such phenomena was Pickman, who was for a short time in Italy and who is discussed later (see pp. 172 ff.). After the appearance of Pickman ' thought-reading " magnetizers multiplied in Italy and it may be said that all these were clearly tricksters. One of the most noted was Robert[2] of Milan. Stefanoni challenged him to prove his claims under adequate control conditions, but his proposal was rejected. On the other hand, others who had accepted, such as Bernabei and Eltore, failed completely. Many were the promises that were broken and deceptions that were made in order that animal magnetism might still continue to win the great favour of an era. But towards the end of the nineteenth century its definite decline began.

The numerous tricksters, often supported and favoured in good faith by ingenuous physicians and scientists, merely caused great confusion in the ideas and opinions already formed about animal

[1] It ought perhaps to be stated here that Donato himself said that he did not think he possessed any supernatural gift and did not believe in either thought-transmission or mental suggestion. See J. R. L. Delboeuf, *Magnétiseurs et Médecine* (Paris, 1890, pp. 113; 19).

[2] For Robert cf. C. Richet (37, p. 590).

magnetism. However, despite these confusions, there was the beginning of a better clarification and a clearer distinction between magnetism, hypnotism and spiritism and of a natural explanation of all the magnetic phenomena. The importance of suggestion and autosuggestion in the production of hypnotic phenomena became increasingly more evident. As to the factors responsible for causing these phenomena, more and more weight was given to those of suggestion, such as imagination, psychological disposition, and the sensitivity of the hypnotized subject, while there was a progressive decrease in the importance formerly assigned to the concept of the hypnotizer's " magnetic fluid " which came to be attributed to his power of exercising a psychological influence over the hypnotized subject. Thus Morselli judged hypnotism as a measure of a neurosis, as did Mosso. Francesco Vizioli at the Medical Congress in Perugia in 1885 gave a lecture with the significant title : " On the hypnotic disease and on suggestions " (38).

In its ethical aspect hypnotism was in general considered permissible only when employed in medical experiments directed to the investigation of existing morbid (hysterical) states. From the religious aspect a decree of the Holy Office of 26 July 1899 was recorded which in reply to questions on hypnotic experiments declared these permissible provided the premise was admitted that it was not desired to obtain the required effect if this had to depend on a preternatural cause, or if it might be a cause of scandal, or if it treated of matters which certainly surpassed the forces of nature. (See 39, p. 33 ; 40, II, pp. 32, 33, 35).

With the gradual decline of popular interest, animal magnetism, stripped of what was superfluous and in this way becoming identified with hypnotism, was confined almost entirely to its use as a therapeutic means of treating various neurotic conditions.

Records of Parapsychological Phenomena

A great number of parapsychological phenomena, such as thought-transmission, divination, transposition of the senses, retrocognition, vision both at a distance and through opaque bodies, etc. are reported in Italian reviews and publications during the nineteenth century.

Generally speaking, however, it is a question either of anecdotal stories, of which the value and trustworthiness rest solely on the seriousness and respectability of the reporter, or of public experi-

ments, carried out for the most part on the stage by various magnetizers and their somnambules.

An exception may be made of some experiments carried out in Milan in 1850 by the famous magnetizer Lassaigne and Mme Prudence Bernard, of which there exist detailed reports that show that certain precautionary measures were taken which, at that period, provide evidence of a more serious attitude to study and research.

The first, reported by C. A. Calderini (12), refers to two experiments that took place on 6 and 9 September 1850 in the hall attached to the Scala Theatre in Milan, in the presence of numerous persons and especially medical men, among whom were Drs. Gasparini, B. Biondelli and A. Bonati, as well as Calderini.

In experiments with Prudence Bernard, precautions to avoid her seeing normally were of various kinds and an account of many of these will be found in the French Section of this series. In the present case the methods adopted were bandages applied over the eyes, together with two large wads of cotton wool, which were kept in place by winding a scarf many times round the head where it acted as a bandage and was fastened behind.

As was quite common in Prudence's performances, a game of écarté was at first proposed. The Director of the Numismatic Cabinet, Bernardino Biondelli, was presented to Prudence while Lassaigne stood at her side but a short distance away and did not look at the cards. It seemed to Calderini that she was not really playing but simply turning over the cards and always guessing them. She conversed with her partner as if she saw both the cards and the way they were being played.

According to what has been reported, various telepathic phenomena were noted as occurring in the sitting of 6 September, but no particular care was taken, since Lassaigne was always left in close contact with Prudence and was practically free to act as he wanted. In the next sitting, however, things were differently arranged. Calderini promoted the experiment and the following is an abbreviated account of his report :

> " It was proposed to me to ask that Prudence's eyes should be bandaged and that she should have cotton put in her ears ; that Lassaigne should in one experiment persuade the somnambule to have her mouth stopped up by a handkerchief inside it or one wound round her head and knotted behind ; that he should neither move, nor speak, nor shuffle his feet, nor touch the somnambule during the experiment ; that he should transmit his mental commands while standing at a considerable distance

from the somnambule and through a closed door, a screen or some other large opaque body ; moreover, except in the experiments in which it was strictly necessary, he was not to know what was wanted of the somnambule nor who would be put into *rapport* with her. By use of these precautions it seemed to me that I should succeed in excluding any communication between the two, except mental. I should at least have succeeded in inferring that this communication had not occurred through the ordinary channels of the senses.

These precautions, however, were not adopted. Lassaigne was kind enough to permit Masserotti and myself (the arch sceptics), Pessani and Bonati to carry out the tests (of 9 September) without the least intervention by himself, from the initial magnetizing to the last test. This concession of his meant that every means of communication between the two was excluded [op. cit., p. 412].

We started the experiments by giving this instruction : Lassaigne is to put himself at a distance from Prudence and to magnetize her to the point of somnambulism and catalepsy ; if necessary, we are to assure ourselves of the reality of the state of somnambulism since this is easily simulated under attempts at magnetizing by a new operator ; to experiment in the transmission of thought to the somnambule, first by speaking in a low voice in the ear of the magnetizer, then presenting to the magnetizer in writing what is to be transmitted, and finally making a personal proof, that is to say by transmitting ourselves without the intervention of the magnetizer.

These are the experiments as they were made and which were successful.

Lassaigne allowed Prudence to be put into the somnambulist state by the one of us, Masserotti, who had produced the mesmeric sleep in other subjects and who was asked by us to act as operator. We were in a large room in the presence of a few people : Prudence was seated at a distance from the few persons assembled and encircled at a short distance by us experimenters. Lassaigne at first seated himself on a sofa some distance away ; after a short time he left the room, then returned during the experiments. He never took any part in our tests nor did he ever know beforehand what we wanted Prudence to do. We excluded him, however, from the time that magnetization began, during the experiments and until the somnambule was awakened and restored to a condition of normality. Masserotti had induced in her the magnetic sleep and thence somnambulism " (op. cit., p. 413).

After having been assured of Prudence's somnambulism by means of pricking with pins on the hands and arms, bending back the .ing finger and examination of the pupils, Calderini continues (op. cit., p. 415) :

" We began the tests and the first experiment did not succeed ; she was blindfolded with large wads of cotton wool and a scarf was wound

round her head ; then the whole of the head was covered with a shawl which fell down as far as the neck. Every possibility of her being able to see was thus eliminated. A playing card was taken and, without even looking at it, was held in front of the nape of her neck. At first she said she could not distinguish it clearly and then asked for the card to be held a short distance away from her head, saying that she had confused sight of it, in the same way as when a book is held too near to the eyes. But she again saw nothing. The test did not even succeed with cards made to pass behind the nape of her neck at the distance which she asked for them to be. We then carried out experiments in transmission of thought and of will. From his sofa Lassaigne himself advised us to attempt the former. All the rest was invented by us without any of those present knowing anything about it. Lassaigne advised Masserotti to magnetize an object and to place it on a table mixed up with others ; after that to order her to pick it out and mentally transmit to her what she was to do with it. Masserotti mesmerized a card which happened to be on a little table together with other objects. Prudence, who was behind the table, was invited to select the mesmerized object. With both hands she turned everything over, took some objects, estimated their weight, smelt them, but could not pick out the object, saying that all the objects seemed mesmerized to her. Finally she succeeded in picking out the card, more by a process of elimination than by any other method. This uncertainty and confusion was attributed to the fact that Masserotti during the process of mesmerizing the card had not isolated it from the other objects, on which he had made the mesmeric fluid fall also, and thus this error was explained [op. cit., p. 416].

We proceeded with the examination ; I myself, in a very low voice and so that no one else could hear, whispered in the ear of Masserotti to give the card to a gentleman present in the room and at some distance from us. Masserotti mentally ordered her to do what I had decided. In doing this he did what he had seen Lassaigne do ; that is to say he stood behind and at some distance from the somnambule, holding out his arms as if guiding her and every now and then he acted as if sprinkling something with his hands. Then the suspicion entered our minds that Masserotti's glance, fixed on the gentleman towards whom he had strongly directed the somnambule, might have served as a sign either for Prudence or for some other person (if there might have been a plot) and that it was for this reason that the experiment succeeded. I thought then of something that would free us from this suspicion. I advised Masserotti to try to make Prudence operate on an object mixed up with many others in such a way that she alone might be able to see it distinctly with the eye of the mind, but that the others were not in a position to distinguish what he had fixed on. No one, not even I myself, knew the object of the experiment ; it was left to the choice of Masserotti. Prudence, through the influence of the mesmerizer's will, got up from her seat and went towards a fireplace on the shelf of which were many objects arranged in

symmetrical order: pendulum clocks, vases, knick-knacks, but the experiment did not succeed. Dr. Bonati took me and Pessani aside outside the room and advised us that in order to succeed we should by agreement amongst ourselves, put ourselves in the positions of sympathy and antipathy towards Prudence. I accepted the experiment through which I was able to experiment directly so that my will, expressed only mentally and not in words, might act on the somnambule. Pezzani left me to play the sympathetic role. I returned into the hall and each of us took one of Prudence's hands to put ourselves in *rapport* with her. I took the left hand and Pessani the right and each of us mentally tried to feel what had been arranged as well as he could. After a few moments Prudence firmly squeezed my hand, bringing it to her side and turning her whole person towards me while obviously repelling Pessani. This experiment succeeded in overcoming my incredulity " (op. cit., p. 422).

He then continued :

" The plain and clearly defined events that I had seen were not sufficient for me : what was wanted was that Lassaigne and Masserotti should produce these same phenomena with another somnambule, not Prudence, which would show that these phenomena did not depend on any attribute of the two on whom the tests were made but also on others, perhaps on us all, allowing for differences in degree " (op. cit., p. 423).

The next sitting took place on 13 September and, as before, in Milan in the house of Mrs. M. Castiglioni and in the presence of the medical Teaching Faculty of the Ospedale Maggiore in Milan (41).

Those present were : Professor Bartolomeo Panizza, Dr. Giovanni Strambio, Dr. Luca Cozzi and Antonio Bonati invited by the Teaching Faculty ; Drs. Andrea Verga, Gaetano Strambio, Vincenzo Masserotti, Carlo Ampelio Calderini, Antonio Trezzi, Carlo Alfieri, Cesare Castiglioni, Ambrogio de Marchi Gherini, Antonio Quaglino, Federico Castiglioni, Andrea Buffini and Drs. Serafino Biffi and Emilio Valsuani, Mrs. Castiglioni, the lady of the house, and Dr. Adolfo Bauer.

Dr. Paolo Pessani and Dr. A. Bonati accompanied Prudence. Dr. Gaetano Strambio acted as secretary and compiler of the report.

On this occasion Lassaigne did not permit others to magnetize Prudence, stating that putting his subject into *rapport* on successive occasions with different fluids limited the possibility of success, as had been shown by the failure of the preceding sitting.

Lassaigne hypnotized Prudence and after the verification of her state of somnambulism they commenced experiments in thought-transmission.

At first orders to take certain objects were given in a low voice to Lassaigne, (who stood a few feet away from Prudence) and then Prudence was guided by the magnetizer, who made various gestures, towards the object chosen. These experiments were successful but, as many of those present observed, the various gestures, rustling noises and sounds of breathing made by Lassaigne might be interpreted as an agreed code ; on the other hand, the experiments carried out by giving a spoken order into the ear of Lassaigne " showed rather in favour of Prudence's hearing than of the alleged thought-transmission ".

For this reason one wonders why at least the order was not given to Lassaigne in writing.

The report of the sitting states :

> " Dr. Paolo Pessani, conforming to these experimental conditions, wrote an order on a little card ' in sight of Lassaigne '. But Quaglino declared that however sure one might be of Pessani's integrity one must take account of the fact that he had entered the room accompanied by Prudence and that a circumstance like this must be carefully considered in scientific experiments of this sort."

The following experiments then followed and it is reported that:

> " 1. Dr. Andrea Buffini (while sitting at the secretary's table) wrote down an order on a little card and communicated it to Drs. Strambio and Calderini ; he then handed the card to Dr. Cesare Castiglioni and took up his position on the left side of Lassaigne, standing behind Prudence's chair. Cesare Castiglioni took the card to Lassaigne and he read it, pronouncing the words in a low voice and then, turning to Castiglioni as if he did not understand, asked in a whisper, ' Casser ? ' ' Casser, briser ' replied Castiglioni in the affirmative. Then Lassaigne stretched out his right arm towards Prudence ; she got up and walking round to the right side of her chair passed close to Lassaigne and stopped in front of Dr. Buffini. She felt his clothes, took the watch-chain from his waistcoat and the watch from his pocket, holding it in turns to her ears, her eyes and her forehead with signs of impatience and uncertainty.
>
> Lassaigne, who was only a few steps away from her, followed every movement she made with lively gesticulations, assumed an air of command, perpetually breathed heavily through his mouth and nose, advanced and abruptly withdrew his hands and arms and exhorted Prudence in a loud voice to pay attention and obey. It was necessary to make efforts, he said to her, violent efforts. Prudence replied that she could not do it. Finally she unhooked the key from the watch and those present declared that this was enough and that they could pass on to the next experiment. The order written by Buffini was as follows :

'Elle doit venir à moi et casser une chaîne d'or' [i.e. 'She must come to me and break a gold chain.']

2. Dr. Cesare Castiglioni handed to Prudence a little parcel, entrusted to him before the sitting by Dr. Gaetano Strambio. With her hands she endeavoured to ascertain the contents, smelt it repeatedly, placed it on her forehead and on the epigastric region and said that it was a question of human hair. And as no one said anything she asked if she was right or wrong and if this man was or was not gravely ill. Unable to gain anything by such questions, Prudence lamented the fact that nobody knew how to help her or direct her and she asked to be allowed to hold between her two hands the hands of the person who had given her the packet. Castiglioni agreed and Prudence, repeatedly pressing his hands to her heart, said that she saw that the sick man to whom the hairs belonged was weak in the chest and the upper part of the left lung was swollen. Asked if she saw anything else and having received a negative reply, Castiglioni showed the card given to him by Strambio and read on it: 'Tuberculosis of the upper left lung, in a woman seven months pregnant suffering from transitory and acute neuralgia'.

3. Another packet for Prudence was given to her by F. Castiglioni. Prudence, holding it behind her back, took out of the little wrapper a tuft of hair. Castiglioni took back the carton and gave it to Strambio, then put his two hands between those of Prudence and, in answer to her question, assured her that the person about whom he wished to consult her had indeed been present in his memory. Prudence smelt the hairs several times, put them on her forehead, her heart and the epigastric region and said that they belonged to a thin, pale and very nervous lady, afflicted with a very irritable lung disease, with a weak chest, inflammation of the stomach, the intestines and the bladder. When the test was over and it was known that she had nothing more to add, Strambio read on the card given to him by Castiglioni the words: 'Hairs of a healthy little boy'.[1]

4. Over each of Prudence's eyes was placed a wad of cotton over which Lassaigne had placed a folded handkerchief which was knotted at the nape of the neck. Lassaigne asked for a pack of playing cards and while it was being looked for Dr. Verga gave him a book which he said was in French and which he gave Prudence to read. Lassaigne repeated the invitation, saying that it was necessary to proceed slowly, but finally he consented. A table was brought near to Prudence on which a book bound in red leather was placed. Prudence put both her hands on the closed book and when asked said that it was written in French. She turned the book round from one side to the other as if to have a better look at it. She then said that the illustrations were confused, hesitated a long time before replying that they showed houses, plants, animals and human beings: finally she said that they were men and that it was a question of steel engravings: invited to read some phrases she said that she saw on

[1] Cf. Lassaigne (42, p. 70), although this may refer to another incident.

one half of a page on the right hand side the words ' cependant, je pense que ' and would not add anything more to this. She pointed out that she saw these words on pages 5 or 7. The book, which was entitled *Paris, illustrations,* was opened and it was found that the first engraving represented a landscape and that the words above mentioned were not to be read on the pages indicated, nor on any page between the fourth and the eleventh.

5. C. Castiglioni, with the consent of Lassaigne, handed to Prudence a package asking her to read what was written within. She put her hands on it and said that it was a single word written in small characters and she was able to distinguish the letters ' a ' and ' l ' but could not see anything else. On opening the packet which contained the writing there was found a small pink card on which was written in large characters ' L'Abeille '[1] and on the lower edge of the card there was written ' c'est une gazette médicale '.

6. In his turn Verga wanted to repeat this test and presented a folded piece of paper to Prudence which she kept putting on her head and forehead and in this way she uncovered the edge which covered the writing ; then she put her hands over it and said she saw an ' e ', an ' m ' and a ' c ' and nothing else. On the paper was written the motto : ' L'art d'experimenter n'est pas l'art de tout le monde '.

7. It was then wished to attempt to see if by chance it might not be easier for Prudence to see larger objects. Gherini, seated in front of her, began a game of cards. Prudence took her own cards without arranging them, then in the usual way began to throw them down one by one. Quaglino noticed that rays of light were entering through the shifting of a bandage. He put a scarf over the head and neck of Prudence. She continued to play but in such a way that she either did not take up the cards when she won or else took them up when she had made a mistake, just as if she had not seen them.

8. Lassaigne put ten cards face up on the table, inviting C. Castiglioni to choose one mentally. Castiglioni replied that he had done so and Prudence then took his hands and held them for a short time between her own, then she decisively picked up the cards, smelt them one by one, weighed them on her hand, put them all together except for one, the ace of diamonds, which she presented to Castiglioni as the one he had thought of, but Castiglioni denied that this was the one he had thought of and the test was repeated with the same result and the bandage and wads were taken away from Prudence's eyes.

9. It was wished to establish the fact of the direct transmission of thought without Lassaigne acting as intermediary and as a first step F. Castiglioni was invited to try. Lassaigne gave him a pack of cards and told him to magnetize it by rubbing it gently between the two palms of his hands. Castiglioni obeyed and, without telling Lassaigne anything, gave Prudence the card, putting himself in contact with her with his

[1] Possibly *L'Abeille Médicale.*

right hand while he thought of the person to whom he wanted Prudence to hand the card. Prudence, holding Castiglioni by the hand, got up from her chair, walked with uncertain steps five or six paces and after having nearly given the card to Mrs. Castiglioni she said that the person wanted was not a lady and handed the card to Dr. Bauer pronouncing the words, ' C'est à vous '. Castiglioni said that the person to whom he wished the card to be given was Quaglino, who was sitting in front of Prudence and for whom it was not necessary for her to leave her seat.

10. C. Castiglioni now prepared himself for a new experiment and, with a firm idea in his mind, he offered his hand to Prudence to put himself in *rapport*. Prudence got up, asking Castiglioni to support her with his hand, and went towards Gherini who was sitting in front of the chair where she was seated, felt him over, took away his watch and his tie pin, then left him and approached Calderini who was sitting near. She took away Calderini's right hand glove and took it to Castiglioni, showing her pleasure at having found it. Castiglioni denied that what he was thinking of had been carried out. Then Lassaigne observed that an experiment carried out in this way could not succeed since it was necessary to give in advance at least an indication of the kind of action that it was desired should be carried out. C. Castiglioni then said that it was a question of taking an object and he began to carry out the test again with the same idea as in the first place. Prudence, who had remained seated in her chair, got up again and taking C. Castiglioni's hand started towards F. Castiglioni who was standing near Gherini and Calderini ; she fumbled in his clothes, took away and put back into the pocket of his overcoat his pocket-book, finally untying the knot of his tie. Dr. C. Calderini said that he wanted her to take off from the right hand of Calderini, with whom she had first been in *rapport*, the copper ring.

11. Strambio whispered an order to Masserotti so that the latter might get it carried out by Prudence, putting himself in *rapport* with her as usual. Prudence got up and holding Masserotti's hand went across the room to the left. She felt over one of the people there and presented an object to Masserotti, who denied that it was the required object. Prudence then fumbled about in the clothes of Giovanni Strambio who was seated at the side of the table occupied in writing notes, and at last she went to this table on which there was some paper where the accounts of the experiments were written and on the paper was the pen used. To the right and left of the paper there were a little porcelain vase holding four or five pens, then a little dark coloured inkstand, then a larger one in silver, a little silver one, a little lid also of silver, a block of white paper, a pack of playing cards and finally a pocket knife with a white handle. Prudence took up and then laid down one object after another, and then handed to Masserotti the little silver lid and the pocket knife, repeating that the object fixed on was white, but finally, tired of making these useless attempts, she stated that she was unable to carry out what was required of her. The order given by Gaetano Strambio to Masserotti

was as follows : 'Come to the table and throw on the ground the pen have been using'.

At half past four in the afternoon Lassaigne awakened Prudence, after repeating several times that experiments carried out under the influence of so many wills different from his own could not completely succeed and saying that he travelled the world in order to give entertainments and not to attempt scientific experiments. After this the session was terminated."

We now report the concluding statements concerning the sitting and regarding the part that parapsychological phenomena played in them :

"The undersigned, Drs. Giovanni Strambio, Luca Cozzi, Andrea Verga, Vincenzo Masserotti, Antonio Trezzi, Carlo Alfieri, Cesare Castiglioni, Ambrogio de Marchi Gherini, Antonio Quaglino, Federico Castiglioni, Andrea Buffini, Serafino Biffi, Emilio Valsuani, Carlo Ampelio Calderini, Antonio Bonati, Paolo Pessani and Gaetano Strambio the Secretary.

After careful observation and consideration of the events produced at the sitting of 13 September 1850, in the presence of the Medical Teaching Faculty of the Ospedale Maggiore and limiting ourselves to the evidence of these alone . . . we feel ourselves authorized to formulate the following conclusions :

1. The somnambulist state of Mme Prudence is highly disputable.
2. The orders which are expressed verbally to M. Lassaigne are carried out by Mme Prudence.
3. Orders communicated in writing to M. Lassaigne and read by him in a low voice are executed very imperfectly by Mme Prudence.
4. Transmission either of the will or of thought was not verified at all unless with Lassaigne as intermediary.
5. Transference of the senses did not occur.
6. Clairvoyance was not demonstrated nor vision through opaque objects.
7. The power of divination was not verified.
8. The problems relating to the above mentioned thus remain as at first.

The action of one individual on another, so as to produce sleep, anaesthesia, catalepsy and phenomena which could relate to the increased or decreased acuity of the senses, is recognized as physiologically possible. The transposition of the senses and vision through opaque objects cannot be regarded as proved, when such phenomena may become confused with the vicarious accentuation of other senses. Divination, the instant transmission of will or thought, can be regarded as experimentally far from proved."

On the evening of 25 September 1850, on the initiative of the Society for the Encouragement of Science, Letters and Arts of Milan, and in the presence of 63 members, Lassaigne and Mme Prudence were invited " to make experiments of a scientific character " (43).

A Commission appointed for the purpose was created, chosen strictly from those within the Society and composed of Dr. Salvatore Pagliaghi, President, and Mr. Francesco Brioschi, an engineer, Dr. Antonio Taschini and Mr. Carlo Tenca, Secretaries. The Commission had the task of drawing up the report of the sitting and of arranging in advance all the necessary precautionary measures in order to give to the experiments every possible guarantee of their serious nature.

The Commission decided that it would itself provide all the objects that might be used during the sitting, that no person apart from the the members of the Society could be present at the sitting, that the members must communicate in writing and under their own signature what they wished M. Lassaigne to make Mme Prudence carry out.

The Commission had also requested that Prudence should keep her ears plugged and her eyes bandaged, but Lassaigne did not accept this condition and proposed instead that he should keep a handkerchief over his mouth during some of the experiments. The Commission in addition appointed Messrs Cesare Cantù, and Francesco Pertusati and Drs. Angelo Dubini and Luigi Marchetti to superintend closely the conduct of the experiments.

Mme Prudence was carefully examined both before and after her passing into the somnambulist state, which was tested by establishing the fact that she was anaesthetic to extremely painful stimuli.

A first experiment in the deviation of a compass needle had no success. Some experiments in finding objects, by a written request to Lassaigne on the part of various members, were carried out correctly by Prudence. There then followed other experiments which have a certain interest and which are therefore given as reported :

" Experiment No. 6. M. Lassaigne offers to perform an experiment at a distance. Mme Prudence has to choose from 5 chairs the one that will be indicated by him while he is in another room. The 5 chairs are then put in a straight line in front of Mme Prudence. But Mr. Voltolina, the engineer, wanted to add 3 more. M. Lassaigne was opposed to this stating that a greater number than 5 would prevent him from recording clearly the position of the chair that he wished to indicate. He offers instead of chairs to arrange five other objects. It was agreed to put on the 5 chairs 5 hats, 3 black and 2 white, and M. Lassaigne announces

that he would make Mme. Prudence choose one of them by making that one seem heavier than the others. He went into the next room accompanied by many members, among whom were Messrs. Cantù, Pertusati, Dubini, Voltolina and Sedini. The last named returned after some time, took Prudence's hand and led her near to where the chairs were. Beginning from the left, she took up the first four hats and after hesitating between the second and the third hats, finding them both of equal weight, she finally took up the third white hat believing this to be the heaviest. As a matter of fact this was the hat chosen beforehand, conforming with what had been said to Lassaigne in the next room, where he remained until the completion of the experiment...

No. 8. Lassaigne proposed that he, outside the room, should make Prudence sing and cease singing according to indications received from one of the members. Accompanied by various members, including Cantù, Pertusati, Marchetti, Dubini, Erba and Triaca, he retired to an adjacent room with the doors closed. After some time Lassaigne presented himself at the door and announced that the delay was due to the fact that the members had not yet decided upon the method of giving the signal. After a little time Prudence began to sing, interrupting and resuming the song three times. After the members had returned into the room with Lassaigne it became known that the beginning and the interruptions of the song occurred immediately, or a few seconds after the orders given to Lassaigne, which consisted of a pressure of the hand on his shoulders.

No. 9. Lassaigne was asked if he would make further thought-transmissions, while he remained in the neighbouring room. He replied that it was necessary for him to see or hear Prudence during the experiment, so that he could determine whether the orders transmitted were or were not carried out and so that he could direct her. It was then decided that he should place himself behind a screen, already in position, in such a way that through a glazed aperture he was able to follow her movements with his eyes. Behind the screen were some of those present, including Triaca and Pertusati. After a moment Prudence got up and put down her right leg with a trembling motion. Triaca, who had ordered this movement to be carried out, also ordered her to put her hand to her side, but this movement was not carried out since Lassaigne said that the screen was placed in a position in which he could see only Prudence's back and he asked for her to change her position. After she had placed herself in profile Prudence brought her hand to her forehead, which was exactly the new order given by Triaca. . . ."

A later experiment in telepathy carried out with the complete exclusion of Lassaigne failed.

"No. 11. Dr. S. Pagliaghi took the right hand of Prudence with his own, with the idea of making her say what he was thinking of, which he

had not communicated to Lassaigne nor to the others. She began to say that the matter referred to Pagliaghi and that it was he whom she saw. He was not standing but was seated on something and it was dark. Then Prudence complained that he did not help her by confirming what she said ; M. Lassaigne intervened, saying that it was necessary to encourage her in this way. She then resumed and said that Pagliaghi was not alone but that there was another person with him and this person was a man. She went on to say that this man had a sinister appearance and seemed as if he were following him. Lassaigne advised her not to lose herself in details but to concentrate on the main fact. She went on to say that this man wanted to do harm to Pagliaghi, who was afraid, pale and with a haggard look, and that she heard much noise. She said that the darkness prevented her from seeing clearly. Then Lassaigne advised her again to go direct to the fact. And she repeated that Pagliaghi was pale. Lassaigne asked her the reason for this and she again said that she could not see clearly but had heard the noise of something which had fallen. At this point Pagliaghi got up saying that he had imagined himself to be in the company of another man in a little boat on the lake and to be in danger of his life owing to a storm having blown up, but in the end they were saved.

No. 12. Sedini then put himself in communication with Prudence and with the same intention as Pagliaghi had had ; he told no one the story which Prudence had to repeat. She began by saying that she saw nothing, not even Sedini himself. Then she added that he was on a journey, pretending to be in a carriage with a horse in front. But Lassaigne became impatient : and she said that with him near her his influence did not allow her to carry out, step by step, the thought that only gradually entered her mind ; Lassaigne then withdrew behind the screen. She went on by saying that they were passing through a little town, where they would have liked to stop but continued on towards a great house which was not a hotel and into which he had gone, climbed the stairs and came into a room, adding that he was afraid but she did not know what it was about ; perhaps they wanted to rob him, to overcome and master him, but he wanted to resist, and they tried to do him harm, to assassinate him. Then she said that she heard something moving, shouts, and a dog which terrified him.

At this point Sedini, who during Prudence's story had already confirmed some of the details, exhibited much astonishment and told how he himself had been thinking of an incident that had happened to him when he was a young man. He had set out from Milan by carriage and having arrived at Saronno had been taken to be put up at a great house ; having gone up to the bedroom allotted to him he heard cries and noises as if of chains, which made him think that evildoers might attack him and hence he was very much afraid. These noises continued but at last he found out that in a room close to his own there was a dog tied up by a chain. The dog, hearing the noises he made moving about

the room, tried to release itself as if to run away from him. Sedini added that each time Prudence showed herself uncertain in her story he concentrated intensely on the detail he wanted her to say, obtaining his aim."

At this point the experiments ended. And it is to be noted, added the compilers of the report, that these experiments were carried out in a room which Lassaigne and Prudence had entered for the first time, where there were neither mirrors nor floorboards and the paved floor was covered with a carpet ; that Lassaigne, during the entire sitting, remained almost always behind Prudence and at a distance of two, three or four paces, and that the persons whose task it was to control him never saw him move his lips either when he was reading the written orders or when he was having them carried out ; neither did he do anything or make any noise that might be interpreted as a form of code between himself and Prudence.

The Society had invited Lassaigne to another sitting which was to be completely devoted to experiments in thought-transmission without the collaboration of Lassaigne. But Lassaigne refused owing to the fact that he was expected in Venice (42).

The clear discrepancy between the results of the reported sittings is very perplexing : unlike the preceding sessions, indeed, the last sitting showed a surprising percentage of successes. Complicity on the part of some of those present cannot a priori be ruled out, although it appears improbable. On the other hand, the precautionary measures taken during the course of the experiments, although far from perfect, can nevertheless be considered as limiting the possibility of a conventional code between Lassaigne and Prudence. Doubtless if the experimenters had been less ingenuous and had exercised a greater rigour and control the telepathic phenomena produced by Lassaigne and Prudence might have been confirmed as worthy of attention.

Another series of mesmeric experiments of which we possess a detailed description is that reported by P. Beroaldi (13). The experiments took place, at varying intervals in 1850-1851 at the Ospedale Provinciale of Vicenza and were of the nature of researches designed to study the eventual production of mesmeric phenomena, the transmission of thought and clairvoyance.

Two men and two women, patients convalescing in the hospital, were used as voluntary subjects. Acting as magnetizers were two of the physicians in the hospital, Dr. Andrea Vaccari and Dr. Giuseppe Toffoletto in collaboration with Mr. Luigi Dalla Vecchia, " a gentleman cultivated in physical science ".

The experiments took place on the hospital premises in the presence of the Director, two physicians, two surgeons from the hospital and other professional persons and other local authorities. In Beroaldi's account, however, only the experiments with the two female patients are reported.

First the 22 year old Rosa Velo, who was convalescing after a slight arthritic and bronchial complaint was magnetized by Toffoletto. Six sittings were held from 1 to 10 December 1850. The patient rapidly fell into a deep hypnotic state, often reaching the cataleptic state. Velo, according to the account, correctly followed numerous orders mentally given to her by Toffoletto but thought of from time to time by one of those present.

The magnetizer stood at a distance of three or four paces behind the subject while attempting to transmit mental orders, the orders being communicated to the magnetizer by one of those present drawn by lot " in another place, with every precaution " and sometimes written down. The mental orders were not carried out when the magnetizer was in another room. Velo succeeded, moreover, in executing successfully mental orders, even complicated ones, which were directly given by the Director of the hospital and other physicians present. All the medical men, with the exception of the magnetizer, knew what the orders were. She succeeded also, when sight was excluded, in knowing precisely when the magnetizer was tasting sugar.

In the following experiments Orsola Bajo, a 26 year old patient, was employed. She was of nervous temperament and was afflicted with ankylosis of the articulation of the right knee. Six sittings were held with her from 3 to 19 January 1851. Toffoletto and Vaccari acted as magnetizers after the second sitting.

Bajo never reached the cataleptic condition nor was she ever able to carry out required actions or mental orders. Nevertheless, according to the report, it was possible to establish the fact of vision with eyes closed and perfectly bandaged (13, p. 31). The eyes were covered over with cotton and with a thick and wide coloured scarf, wrapped round eight times. All those present superintended the bandaging, some testing it on themselves, and all agreed that it was absolutely impossible for the patient to see. Besides, in the course of the first sitting the cotton and the shawl were substituted by a mask, consisting of two pieces of cardboard stuck together, which hermetically sealed the eye sockets.

Bajo correctly read several words written in printed characters on little pieces of cardboard which were given her to hold and which

were unknown to the magnetizer, who stood at several paces distant with his face turned away. In the course of the sitting Bajo succeeded several times in distinguishing various colours (handkerchiefs, playing cards), in counting exactly the number of persons present and in recognizing those persons who were presented to her and the positions they assumed, in distinguishing the value of playing cards and naming various other objects shown to her. Few errors were noted.

However the test of deviations of the magnetic needle failed.

During the last sitting Irene Tromben, a 20 year old patient, was also magnetized by Mr. Alverà (13, p. 52). Having reached the magnetic state, the patient succeeded, amongst other things, in beginning and ceasing to sing at command. The mental order was given to her by the magnetizer who was in another room together with numerous other people, amongst whom was the Director of the hospital. The latter took it in turns, with an agreed sign, to communicate the order to the magnetizer.

This series of experiments may be considered particularly interesting on account of various factors present : firstly they were all conducted within a hospital and there were always present qualified persons representative of the medical faculty of the said hospital. Particularly worthy of note is the fact that both the mesmerizers and their subjects were not professionals and did not work for money or to obtain publicity. It was in fact a question of physicians of the hospital and of convalescing patients who had recovered and who lent themselves voluntarily to these experiments.

All these factors obviously reduce the probability of the existence of possible trickery.

During the course of the sittings, moreover, precautionary measures were also taken which, even if not entirely satisfactory, can be considered among the more scrupulous of those generally adopted, as compared with similar experiments conducted in Italy at the same period.

The results, especially with the subject Bajo, are very, perhaps excessively, surprising : almost no mistake in the clairvoyant experiments. Since, however, the measure of control adopted cannot be considered adequate, above all those directed towards avoiding the occurrence of conventional signs, any more than those intended to exclude the possibility of normal vision, the results must be accepted with understandable reserve.

Once again the ingenuousness of these researches is surprising. One wonders why they did not propose experiments that were

simpler and more foolproof, such as stating the value of a playing card shown covered to the subject.

The compiler of the report, Beroaldi (the Director of the hospital in question), moreover, showed himself perhaps too enthusiastic over the powers of animal magnetism, to the point of making us doubt at times his objectivity and his critical faculty, and this is also a point which should be borne in mind in the complex task of appraising the validity of the experiments cited.

All the most noted Italian magnetizers, such as Pietro d'Amico, (44), Antonio Zanardelli and Francesco Guidi, boasted of having succeeded in the production of parapsychological phenomena with their somnambules.

Francesco Guidi, probably the most famous Italian magnetizer of the period, lists the following among the parapsychological phenomena produced by his subjects Stefano U., Pietro D., Enrichetta A., Caterina L., and especially Amerigo P. and Erminia S. : " transposition of the senses, thought-transmission, eyeless vision, vision through opaque objects, vision at a distance, diagnosis and therapy of diseases at a distance, divination, retrocognition, speculations about the other world, and other clairvoyant phenomena " (16, pp. 209 ff.) Guidi was originally connected with the direction of various theatres and claimed that he had such a passion for the " new science " of mesmerism that he gave up his job entirely to devote all his time to it. He travelled around giving exhibitions of the powers of the somnambules accompanying him and in February 1851 he was showing at Wauxhall pleasure resort in Paris in the Rue de la Douane when his subject Amerigo was demonstrating what were claimed to be the higher phenomena.

At Turin Guidi was also present at Lassaigne's experiments and while he says he was convinced of the great telepathic faculty of Mme Prudence he explicitly accused Lassaigne of being fraudulent and of " mixing the true with the false ".

Reporting, Guidi stated : (16, p. 229).

" I put myself in rapport with her (i.e. Prudence) without confiding anything to her magnetizer, and she immediately and perfectly described to me a trip from Turin to Rome, passing through Genoa where we embarked, disembarking at Civitavecchia by the lonely road leading to Rome, stopping halfway at a little village called Palo and seeing in the distance the eternal city of the seven hills, entering into it and stopping in a great square of which she gave an exact description which could refer only to the Piazza del Popolo. The journey that passed through my mind, as in the varying scenes of a moving panorama, was described

by the somnambule and, what is even more surprising, the somnambule felt she was really travelling and in particular she had the sensation of being in a ship between sky and water."

This might be a testimony of some interest if the author were worth attention, which is certainly not the case.

The following is an extract from a letter to Luigi Stefanoni from Dr. Alessandro Cugini, Professor of hygiene and legal medicine at the University of Parma (18, p. 129).

"In the month of July 1860 Mr. Guidi gave, in the Royal Theatre of Parma, two magnetic sittings which, as always and from beginning to end, were satisfying to initiates and novices but did not satisfy those for whom the spectacular and the strange were not sufficient to convince them of the authenticity of the experiments. For some of the latter, among whom I was one, Mr. Guidi proposed to give an experiment in a room of the national guard, where there was neither a stage nor anything that could lend itself to trickery. In this third and let us say private test Mr. Guidi's clairvoyante in fact saw nothing. Indeed, from the hairs of a person (enclosed within a sheet of paper) presented to her by Mr Guidi it was never possible for her to gather anything true about the physical and moral state of that person, nor was there even once any way by which she could guess where a person was with whom the magnetizer had put her in *rapport* or could cross in the correct direction the short distance which divided the experimental room from the other one. It was then that someone thought of trying a kind of *experimentum crucis* concerning her clairvoyance : for that purpose some hairs of a little dog were enclosed within a small bit of paper and handed over to the somnambule."

Cugini goes on to say that Guidi's somnambule stated that they were the hairs of a man, later describing his characteristics (18, p. 130.)

Stefanoni then referred to numerous written statements according to which Guidi, who was a self-nominated professor, was shown to be an untrustworthy person.

Indeed, none of these magnetizers had accepted a large prize publicly offered by Stefanoni to anyone who carried out one of the following experiments :

1. Clairvoyance : reading a number of five figures through a sheet of paper.

2. Thought-transmission : the number will be communicated to the magnetizer, who will be able to transmit to the somnambule by thought, only, however, after one of them has been so separated

from the other that there can be no communication between them by hearing or by sight.

Instead of accepting, the magnetizer B. Figari came forward and offered some ridiculous conditions : his somnambule would divine the diseases of the persons present only if they had declared the symptoms of the disease and the seat of the malady ! (18, p. 159).

Generally speaking, the Roman Catholic authors, such as G. G. Franco (cf. 35, 39), G. M. Caroli (8), Savino (46) and Lapponi (47) showed themselves the most credulous and they reported very numerous examples of clairvoyant phenomena, etc. (often without even naming those who produced them), the reality of which they declared themselves convinced as evidence of diabolic intervention.

Still, Caroli himself showed himself disappointed in Cahagnet's famous somnambule Adèle Maginot : having been personally present at a few experiments, he stated that " the infallible Adèle fell into numerous errors in reply to questions put to her by myself " (8, p. 164). Again, Caroli joined with Guidi in criticizing as devoid of any serious nature the experiments of Mr. Mongruel and his Sibyl : this couple travelled in Italy exhibiting little cards bearing the words " La Sybille Moderne, passé, présent, avenir ".[1]

Verati also reported various clairvoyant phenomena mostly verified in France and although he stated that he was convinced of the reality of clairvoyance and of thought-transmission he wrote :

> " I, however, have so far not been able to observe any phenomena like visions, within or without, or seeing at a distance, and once the following incident happened with my own somnambule. I was given by a worthy physician a piece of money wrapped up in paper, so that I might ask the somnambule to identify it : she made efforts to name it, but in vain : she complained of severe pain in the forehead and abruptly gave me back the coin, saying in a loud voice that she neither wished to see nor do anything about it. Some persons insisted on obtaining from her what was wanted and begged her again to comply. Then she came and whispered to me in a voice that was hardly intelligible even to me (the others were in a circle at a distance of five or six paces) and asked me what the coin was. As might be imagined, I gave a categorical refusal and she became angry, got up and wanted to go into the other room where there were only a few persons who knew her " (48, iii, pp. 361-2).

[1] For the Mongruel case see p. 197 in the French Section of this series where bibliographical references are given.

As is now clear, we are confronted by a mass of anecdotal material, examples of which could be multiplied, in which the reported parapsychological phenomena are hardly worth attention because of the total absence of the slightest control conditions.

Dr. A. Battandier, in a correspondence from Rome to the paper *Cosmos* (Paris) of 7 June 1886 (49) refers to some experiments in magnetism that Zanardelli carried out on his wife Emma at which he was personally present as one of a number of doctors who were among the audience. He stated that after the subject had been put into a somnambulist state Zanardelli obtained hypnotic phenomena through orders given mentally. Moreover, members of the audience were themselves able to obtain similar phenomena through orders given in the same way, putting themselves into communication with the subject by simple contact or communicating with the magnetizer who was in his customary *rapport* with the somnambule. We have already referred to the method he used to hypnotize her, which was in every way similar to that practised by Donato, that is to say pressure on the hands and a fixed stare.

The transmission of a mental order demands that the person giving it has to think strongly about what he wishes done and this concentration of the will must persist until the order is finally executed. Whoever does not wish to communicate directly with the somnambule and takes advantage of the magnetizer as intermediary takes him by the hand and with a fixed stare (so he says) unites his own thought with that of the magnetizer, and thus the command may be transmitted mentally to the lady with whom he is in constant magnetic *rapport*. Now as regards the experiments.

A spectator holds his handkerchief tightly in his hand, mentally ordering the somnambule to smell a particular kind of perfume that might be on the handkerchief. The handkerchief itself is now put into the hand of the somnambule who, having smelt it, names the scent which she smells there and which is the one wished for (op. cit., p. 258).

Another spectator imagines some scene or other and immediately the somnambule describes it, although with some inaccuracies. But she leaves no doubt that she is really seeing the scene asked for.

Another wishes Emma to imagine herself walking in a meadow and meeting there a big snake which threatens to twist its coils around her. Instantly she seems to see this because she draws back, presses her clothes around her and tries to jump up on the chairs ; her signs of terror eventually become so real that the spectator cuts short the test by imagining that the serpent leaves her. And

immediately the appearance of the somnambule becomes quiet and the joy of liberation is depicted on her face.

Others order her, always mentally, to change her bracelet from the left to the right arm, to exchange chairs, to make three turns round her own seat, to take a handkerchief from the pocket of a spectator, or to extinguish certain candles.

Everything is done precisely as commanded. Someone orders her to remain completely motionless : to the great surprise of the audience she stops still and is beginning to express doubt as to whether she can carry out the command when the person who gave the order declares that this is nothing other than the order that was given to her.

She is very successful in describing minutely objects that the spectators have on their persons or in their pockets. Also in the case when you imagine you have something which you do not really possess she will describe exactly the object of your imagination. On the contrary she does not discover something that you have but have forgotten. Similarly she will tell you the time by your watch, even if you have changed it from the correct time. But to do this it is necessary for you to know the time at which you have set it (op. cit., p. 259).

From this account it seems obvious that all these alleged paranormal phenomena were fraudulent and do not merit serious attention.

About 1890 the famous performer Pickman was exhibiting in Italy in the theatres of various cities, among them Turin, Milan and Genoa, and the crowds of spectators were sent into ecstacies by his series of highly effective experiments.

We can get an idea of these exhibitions through a description of them left by Cesare Lombroso who says :

> " After he had been stimulated by fasting and large amounts of strong coffee and by the applause which greeted his popular conjuring tricks, he could put himself in communication with the first comer (unless he held him in great antipathy and distrust) and when the latter ordered him, thinking hard (although, be it well understood, in the French language and not otherwise), to perform a restricted number of actions, such as guessing numbers or words, tracing with closed eyes a very complicated design and performing certain actions upon given persons, such as hitting them with so many blows on the head, clipping glasses on to the nose and, above all and always, guessing who might have assassinated a certain spectator, and the knife, chosen from twelve similar ones, that might have wounded him and the reason for the injury

and the place in which he had hidden the imaginary corpse and his clothes ; all this while his eyes were bandaged, his ears plugged and while persons other than the participants adopted the most rigorous precautions against fraud " (50, p. 207).

Lombroso personally studied Pickman and the results of this investigation are reported in the article published by him in 1890 and elsewhere (Cf. *Gazz. Lett.*, 1890, xiv, pp. 12 ff ; *La Civ. Cattolica*, 1890, 14 ser., vi, pp. 285-311 ; *Journal* of the Society for Psychical Research, Oct. 1890, iv, p. 303 and for a later account see the *Annales d. sci. psychiques*, 1904, xiv, pp. 264-273). In the same report there is recorded a complete psychiatric and anthropometric examination of Pickman, who was classed as neuropathic and hysterical, with a central nervous system in unstable equilibrium which much resembled that of a somnambulist subject.

In the same article are then summarized some experiments carried out by Pickman in the presence of the same scientist. Lombroso reported :

" In my laboratory, without contact and with eyes and ears bandaged, he guessed 9 times out of 10 a playing card ; he guessed 7 times out of 10 without his eyes bandaged. Whether the hypnotizer was in the same room or in another had no influence. It is curious that numbers distributed on 20 similar pieces of card were guessed by him with less success (6 or 7 out of 10), always without contact ; and 8 out of 10 when touching the agent. He was never successful with the numbers unless he could touch them with a rod or with his hand ; then he stopped on the number, sometimes hesitating over the preceding or following number ; but unless he touched the card he did not succeed.

On the other hand when it was a question of carrying out certain actions (such as shaving, kneeling, looking for a book or a jewel purposely hidden in a distant place) he succeeded completely. Making his wife sit down he stood near her, we chose a card and a number and his wife guessed it immediately 9 times out of 10. He knew that his wife, who must have been neurotic, had a certain faculty but he said he did not want to take advantage of this because after these sittings she felt herself becoming stupid and she had to put aside her own intelligence in order to be directed by him " (op. cit., p. 207).

From this it may be concluded that in the majority of the experiments Pickman obtained better results if he maintained physical contact with the person who was to transmit the thought to him. Lombrose himself observed :

" He who has watched Pickman closely will have been able to observe how on a few occasions he had the lucidity of reading a thought at

a short distance away ; he more often needed to touch the hand of the agent and even pressed it violently and repeatedly to his cheek and to the nape of his neck as if to facilitate the passage of his physical vibrations (op. cit., p. 213).

Morselli made a strong point of this necessity for physical contact in his criticism of the telepathic faculty of Pickman, to whom he dedicated a book (51).

Enrico Morselli relates how, when Pickman was in Genoa in June 1890 to give a public exhibition, he had invited him to a private sitting for scientific purposes. Pickman only accepted with reservations : he refused to be examined and, on the other hand, carried out experiments in " magnetic attraction " in the course of which, according to Morselli, he was cleverly able to take out his watch, get the two secretaries present to read the number inside it and then to guess the number during his evening show. Morselli said :

> " It was just this trick that led to the great fiasco at Genoa and to his hasty departure from the country. Thus, hardly had his experiments begun when the public were convinced that there was no trace of divination but only of a great ability to make use of the ' unconscious movements ' of his guides, as I have said. He was asked by all for a greater seriousness in experiment and the removal from the stage of all persons who were not well known. Affected by the initial suspicion of the spectators, Pickman suddenly wanted to take his revenge ; he proceeded to guess . . . the number on the inside case of my watch, which was 2653 : a number which I declared I had never read, did not know, and which I therefore could certainly not transmit by thought ! But Pickman, stung to the quick by the public uproar and perhaps fearing that as a consequence I should refuse to take part in the experiment, insisted, pretended to enter into a half-hypnotic cataleptic state while I kept one hand on his head and in the other the closed watch, and naturally he guessed 2653.
>
> But it is easy to understand the consequences of this over-ingenious fraud. Never in my life have I been present at such an uproar of hissing, shouts, Homeric laughter, while the poor diviner, bathed in sweat, pretended he wished to knock his head against the cloth wall of the wings. And it is to be noted that not only for me but also for one of my friends, also a student of hypnotic phenomena, did Pickman prepare the same trick. He himself wrote to him, after hurriedly leaving Genoa, boasting of being able to guess the number of a watch without even the owner who wore it knowing of it, and indeed he did guess this other number which was 47500 " (51, p. 8).

It is not entirely clear what happened both before and during this experiment and a contemporary account published in the

Genoa paper *Caffaro* (20 June, 1890) does not throw much light on it. The reporter stated that at the meeting Pickman asked Morselli for his watch and asked him to look at the number inscribed on the inside of the case. In reply, Morselli said that he could not open the watch with his fingers, to which Pickman replied by saying that it did not matter as he was going to guess the number in the watch, which Morselli stated that he himself did not know. It was therefore a test not of thought-transmission but of clairvoyance. Pickman put one hand on Morselli's head and then in what was said to be a state of auto-hypnosis wrote down a number, after which Morselli opened his watch with his penknife and compared the numbers, ascertaining that that written by Pickman was correct. Although the report stated that the audience applauded he went on to say that the objection was raised that this was not a cause of thought-transmission since Morselli did not know the number and an indescribable uproar followed. Some thought that it was a case of trickery, others accused Morselli of acting as a confederate. To the suspicion that he was a confederate Morselli merely shrugged his shoulders and said that frankly he had doubts about this experiment. It was known that he had relations with Pickman before the meeting and so his doubts were more than justified. As to his own opinion, Morselli himself admitted the probability that Pickman, clever conjurer that he was, had been able to succeed in getting hold of the watch and reading its number without being observed.

It would appear then that Morselli as well as others did not believe in the paranormality on this occasion of Pickman's clairvoyance, although a normal explanation of Pickman's success seems to have been pure speculation. What is obvious is that, if normal, Pickman or his assistant got possession of Morselli's watch, opened it to read the number, closed it and returned it to the Professor. Whatever we may think of Pickman's ingenuity, we can hardly fail to be struck by the poor quality of Morselli's powers of observation and what might lead some to distrust the accuracy of the many observations he made with other mediums.

Morselli firmly denied that Pickman, during his experiments, needed to be able to enter into a hypnotic condition. At the most there was a strong concentration of attention on the little indications that were unconsciously provided for him by the persons who guided him and by the public. On the other hand he had two qualities. One was that of being a very clever conjurer (preparing the public, influencing it to expect unusual events, distracting the attention of the spectators at the decisive moment of the experiment, using

confederates, taking advantage of the good faith of others and keeping something in reserve in case of failure). Also he possessed, sharpened by practice, a singular perceptiveness through the tactile, thermal, visual, auditory and olfactory senses. Morselli also said that he believed that Pickman's hysterical states, which occurred particularly when the experiments showed signs of failing, were a good means of claiming the indulgence of the public.

Morselli then proceeded to detailed criticism of the best of the phenomena produced by Pickman in Italian theatres.

1. *Guessing a person's thoughts.* Morselli observes that Pickman began this experiment after having held the hand of his guide for some time : this gave him the first " impulse ", but a " muscular " not a psychical impulse through the light pressure and quivering of the muscles. Morselli stated, following Beard :

> " Everyone knows that all representations or ideas have a motor content which tends to be transformed into actions : thus it happens that the person who has the idea that Pickman or the thought-reader should go towards a given place or object, unconsciously transforms, despite his own wishes, this idea into an actual movement of his muscles, and the reader does nothing but follow the impulse received " (51, p. 6).

The author records also that Pickman *never worked without some contact* either at the beginning or in the course of the experiment : when he was uncertain he *always* again sought the hand of the person who was guiding him, thus receiving new indications in order to arrive at the supposed divination.

2. *Knocking on the head of a spectator a determined number of times.* During this experiment, according to Morselli, Pickman always held the hand of the person who was thinking of the number of blows : the physical psychological mechanism is then based on the perception of unconscious muscular movements and this in a way that is even clearer and more simple than in the first experiment.

3. *Following, with eyes bandaged, a line traced in chalk on the floor.* In order to explain this experiment, other than by the accustomed help of the guide and the public, Morselli puts forward the hypothesis that Pickman, with his exquisite tactile sensibility, succeeded in perceiving under his foot the tracing of chalk, without, however, excluding the possibility that Pickman could in fact see :

> " The bandage was put on at the beginning of the evening by himself, and certainly in the more or less hysterical movements and convulsions that he adopted in the wings or on the stage he could easily have

misplaced it so as to permit him a view of the floor. Pickman, indeed, during both this experiment and the following ones, always walked about with his head lifted and his face upwards, certainly in order to look under the bandage" (op. cit., p. 8).

4. *Discovering an object hidden on a chosen person.* Here again Morselli invokes the involuntary agreement of the subject, repeating that we can never think of a movement without also showing a tendency to perform it. Then noting that Pickman during these experiments required that he should be allowed music Morselli does not exclude the possibility that through suitable variations in the tempo and tone of the sounds Pickman might arrive at the necessary information.

5. *Guessing or writing down a number thought of.* Morselli notes that during this experiment Pickman was always in immediate contact with the hand of the agent, which was put on his head, and thus he had nothing to do but mechanically follow the "impulses" transmitted to him by the muscles that were more or less tense or with more or less pressure. The figures transmitted by Pickman on the slate examined by Morselli were 30 cm. high, drawn with many uncertainties, that is to say in accordance with their possible origin in the light pressures and so forth of the person giving the suggestion.

6. *Discovering the actors of an imaginary assassination, indicating the place where the victim was wounded, the homicidal knife and the object stolen.* The discovery of the assassin, of the victim and of the point at which he was wounded would occur merely by availing himself of the unconscious collaboration of the agent. Morselli adduces as a proof of this the fact that in an exhibition at Genoa a person was chosen as guide who was little disposed to betray by movements and postures his mental representations of the acts to be accomplished, and Pickman, unable to guess anything, asked for him to give way to someone else. In these experiments Pickman was also accustomed to indicate which knife, selected from a heap of twelve, had been used in the mock assassination. Morselli observes that in this case the agent could not transmit any thought, having lost sight of the knife, which he had just marked but which was at a distance at which the agent was unable to distinguish it from the others. It could then only be a case of clairvoyance, continued Morselli (but Pickman had never claimed as much), or of some clever trick, such as taking advantage of an increased warmth of the handle of the knife handled by different persons as compared with other handles, or, better, of a difference in weight, having recourse here to an accomplice who cleverly substituted the eleven knives remaining on the table with

other lighter ones, while Pickman distracts the public. It is certainly a fact that during these experiments Pickman was always assisted by a trusted conjurer.

Morselli concludes his review by lamenting the fact that adventurers like Pickman had the effect of discrediting phenomena that were now scientifically proved, such as hypnosis and actual thought-transmission itself which he does not exclude but of which he maintains that, at the time of writing, we do not possess serious, positive and trustworthy documentation.[1]

Regarding the adventures and misfortunes of Pickman in Italy we must add that Stefanoni proposed that he should read a number of five figures enclosed in an envelope, handing over to him if successful the large sum of 3000 lire which he had already advertised for some years for anyone who could succeed in the test. After at first refusing, Pickman when he arrived at Rome felt compelled to accept. But all his attempts to decipher the number failed (18, p. 38).

Before returning to Paris, Pickman, to everyone's surprise, declared that his experiments were none other than simple conjuring tricks performed with great art and skill.

In the *Archivio di Psichiatria* (1890, xi, pp. 207 ff.) Lombroso and Dr. G. Pagliani of Bologna discussed what they apparently believed were cases of thought-transference. Pickman consented to visit Lombroso's laboratory and apparently the tests consisted in picking out from a pack of playing cards the card thought of by a person present. It was also said that Pickman acted as an agent as well as a percipient. In the case of his wife she managed to guess the number or card given to him to think of nine times out of ten and when a young physician who was present was substituted for her it is said that in twelve guesses he was correct in six. As is usual in most of Lombroso's reports, none of the conditions was adequately described and his well-known credulity makes his work in this field of little value since sufficient is known about Pickman to discount any stories of his alleged paranormal powers.

In the case described by Pagliani (53) it is said that the somnambule, a lady who suffered from spontaneous catalepsy as well as somnambulism, was able to repeat words mentally transmitted to her even when these were in other languages. But if a sentence from some foreign language was being thought of she would give an Italian translation of it. In these cases of mental transmission

[1] Bettòli (52) published a book on the various tricks used to stimulate the higher phenomena of mediumship.

Pagliani found it necessary to maintain some kind of contact between subject and operator, although this did not necessarily have to be direct human contact between himself and the somnambule and wires or threads some 6 metres long were considered sufficient. These experiments are merely described in general terms and deserve no further comment in this place.

An Inquest on Thought-Transference

A further report by Lombroso and others (54) was published in 1891. In this Lombroso intended to reply to the general incredulity that had greeted the experiments he had conducted with Pickman by giving the facts.

The report is divided into two parts. In the first the testimony of private persons is collected, while in the second, original researches are referred to. The first can be neglected : it consists of a collection of seventeen instances of alleged spontaneous thought-transmission which had occurred in various subjects and which were clearly without any possibility of controlled conditions.

In the second part are described some experimental researches conducted by Lombroso in his clinic in collaboration with Drs. Roncoroni and Ottolenghi, and the lawyers Zerboglio, R. Fronda and Mura. The experiment usually consisted in presenting the subject with 5 or 6 playing cards, face down, or cards with a number on them, in such a way that it was not possible to see the figure on them, noting afterwards how many times the subject guessed correctly the card previously chosen mentally by one of the experimenters.

This first series of experiments was conducted for the most part on subjects in the waking state. Lombroso noted that the most successful guesses were made by hysterical and neuropathic patients. One subject, designated as Mac., while in a state of hypnosis guessed the value of the cards 9 times out of 25 in two successive tests, but in the waking state he did even better.

With the 20 year old subject Regis, described as a hysterical type, were reported some experiments carried out in a state of " monoideism ", as Lombroso defined the trance condition. One of these experiments is thus described by the author :

> " After I had written on a slate the word Pitckerel the subject, in a trance condition, with eyes and ears bandaged and at a considerable distance from me (10 metres or more) wrote the word Pitche . . . on another slate.
>
> As he did not know who had written this and was not in direct

psychic communication with anyone in the room, all this must be defined as lucidity or reading at a distance rather than as thought-transmission.

He was able more easily to carry out an act suggested to him and written on paper enclosed in an envelope by a person unknown to him. And this was also repeated in my laboratory. Regis indeed took in his hand the envelope containing the piece of paper with the written order, felt it and finally put it between the palms of his hands as in the act of prayer (the only thing written on the scrap of paper was ' Kneel down and pray '). Regis was told : ' You have not done everything that was ordered '. Then Regis got up in a tired way from his seat and knelt down. On the other hand, when required to guess a playing card of which one of us was thinking, or a card with a number put among 5 other similar cards, he only guessed correctly twice out of sixteen tests (12%), although he held the hand of the person who was thinking of it.

We presented an envelope (always in the laboratory) with inside it a drawing of a pelican and asked him to reproduce it.

With eyes covered with a double bandage he succeeded, although somewhat roughly, being in the dark and not being a good draughtsman.

Another time we made a drawing of the head and leg of a horse which we placed in an envelope ; when asked to reproduce it he made a sketch which suggested the head of a man. When he sensed some disapproval he superimposed on this shapeless form another drawing which showed three legs and part of the body of a horse, saying that it was a horse. This might be an imperfect thought-transmission which lacked precision and not reading at a distance, since no line resembled the figure drawn by us although the essence of it was apparent.

At the third test (the drawing of a clock) he failed completely ; that is to say he wrote some letters and then suddenly stopped saying that he was tired.

In order to do all this it was necessary that first he should fast and drink a great quantity of rum, up to a half litre ; then it was always necessary for his eyes and ears to be bandaged ; his pulse and breathing became three times as fast and he was convulsed in a way that made him seem epileptic.

Afterwards he remained exhausted, half blind, lacking in feeling and almost completely insensible to pain, as if he were coming out of a comatose state.

It is curious that his history was analogous to that of Pickman. His father was a chef who drank much wine, but not spirits, and was a skilful magnetizer ; his mother was a hysteric and suffered from palpitations and a cough ; the paternal grandfather died from alcoholism, while the maternal grandfather suffered from a violent temper " (54, pp. 73 ff.)

After describing some anthropometric studies on this subject the report describes some experiments carried out by Grimaldi and

Fronda with the 20 year old subject E.B., about whom were given some data on the patient's case history and personality. The report continues :

" The following researches concern some highly controversial phenomena (transposition of the senses and vision at a distance) and therefore I wished to take my time over them, testing and retesting and going over all the precautions in order to eliminate every source of error and to protect myself from any trickery.

I first took two pictures and showed them to B. . . . telling him what they were ; I put up the two pictures on a little table and made B. . . . sit down in such a way as to have the table behind him ; then I took first one and then the other picture, doing it always in such a way that it was absolutely impossible for him to see them and then asked him which of the two I had taken. He never failed to state without hesitation which picture was the one asked for. To the first two pictures I then added a third, and later a fourth and a fifth and repeated the test, changing at random the ones shown behind him. In twenty experiments he failed only in three (15%).

I attempted the same test by putting behind the door of the room one or other of the five pictures that were used for the first experiment, and invited the subject to guess them. In ten tests he failed only twice (20%); but only through his earnest desire to reply in too much of a hurry, because after better consideration he corrected himself twice from error. It is noteworthy that if he was made to sit down near another person he became completely disorientated ; as also if the light was placed opposite him and compelled him to lower his eyes. He hardly ever made a mistake when he was able to remain for some minutes with his hand in front of his eyes and with his ears plugged, an attitude that he attempted to adopt independent of my will (the monoideic state like Regis and Pickman). Asked in what way he managed to guess the names of the pictures, he replied : ' I feel myself urged to say a name and I say it without knowing why '.

Here therefore it is not a case of transposition of vision nor of vision at a distance : it is a case of truly precise thought-reading "[1] (54, pp. 80 ff.).

According to the description at least a part of these experiments was carried out with the subject in a state of trance. In the follow-

[1] The report as it stands scarcely carries conviction. It would appear not to be impossible for the subject to have seen the pictures in one of the small reflectors commonly used by gamblers, and the fact that he failed when a person sat near him and when the light was in front of him rather supports this idea. In the case of the pictures exhibited behind the door comment is impossible, since none of the facts which it is important to know is given. [*Ed.*]

ing experiments, on the other hand, it is clearly specified that B. . . was in a hypnotic state :

> " After having hypnotized him I said to E.B. : ' What number am I thinking of? ' And the subject immediately repeated exactly the number thought of. In the second trial the experiments succeeded equally well. Then a chain was formed of three persons together with the hypnotized subject and the hypnotist, who was one of the chain, asked him : ' What number am I thinking of? ' The reply was incorrect several times. A new test of the following kind was then attempted : each of those who formed part of the chain thought of a number, a number agreed upon in another room far from the subject, and one of them asked him what was the number of which he was thinking. The subject almost always replied with a number representing the sum of the numbers thought of by everyone or something very like it " (54, p. 82).

There now follows a description of other sittings in which, however, it is not specified in what state E.B. was during the series : at times it would appear that he was in a waking state, but more often it would seem that he was in a condition of trance :

> " First sitting. The patient is cheerful because he thinks he will succeed in the experiments in thought-reading. A bandage, accurately tied over the eyes, makes it absolutely impossible for him to see ; the same bandage also passes over the ears, which are also plugged with cotton wool.
>
> The experiments are confined to the reproduction of geometrical figures which one of us draws at a certain distance from the subject, behind him ; he was so placed that he could not see the drawing except through an abnormal transposition of the sense of sight. The first figure, a rhombus, he reproduced with a certain difficulty, although it took only a very short time to draw the first line ; after a few seconds he quickly drew the other three lines. A circle was reproduced immediately, with a resolute impatient movement. He showed difficulty in the reproduction of a triangle ; after taking a long time to think about it he drew two sides ; the third, that of the base, was drawn with obvious uncertainty ; instead of a straight line it was a zig-zag " (54, p. 83).

After a pause of ten minutes the subject faithfully reproduced the figure of a polygon, which might also have been the outline of a house ; in a subsequent experiment he reproduced, in two versions, the figure of a cone upside down. At this point " there were indications of exhaustion, reddening of the face and slowness in movements. Two experiments, therefore, did not succeed. Before the bandage was taken off B. . . . was in semi-cataleptic state."

In a second sitting B. hypnotized by Dr. Ventra, did not produce any phenomena of importance.

In the third sitting B. reproduced the head of a man and of a bird, adding respectively an ear and feathers which were lacking in the originals. On the other hand, he failed in the reproduction of a tree, as in three following experiments.

In the fourth sitting B. remained a long time in a state of catalepsy without replying and the sitting was discontinued.

In the fifth sitting, conducted with the same great care as the preceding ones, B. reproduced the name Margherita firstly as Maria and a second time as Margherita. The word Amore was not guessed till the second time, being transmitted the first time as Marier. The name Andrea was reproduced without error with a writing that resembled that of a child who was learning to write.

Three later tests proved negative. After a pause the experimenters present in turn gave some mental suggestions to B. But it was not specified whether the mental suggestion imparted was known to all the experimenters and what precautions were taken to exclude knowledge of it completely from the subject.

Some mental commands were carried out with exactitude and promptness, such as those to go and touch the keys of the piano and to open a door. When he was ordered to go and take an inkstand, instead of obeying, B. took a pen and started to write.

The experiments again had to be discontinued since B. fell into convulsions and into a cataleptic state, and for this reason, the authors say, he was in no state to continue, as had been the case in a preceding experiment.

Finally, a report is given of a piece of research conducted by Dr. E. Ardù where it is said :

> " On 6 December 1890 a certain Giuseppe Falqui offered himself for examination at the school of psychiatry. He announced that he was a hypnotic subject and a thought-reader and produced testimonials from medical and scientific persons well known in our universities.
>
> He went from country to country, offering himself to medical men as a subject, in exchange for a pecuniary reward. He told of having met in Bologna the famous Pickman who, having tried some experiments on him, had called him an excellent comrade. It must be added that, like Pickman, he linked his profession as a hypnotic subject with that of conjurer.
>
> He was accepted, paid and subjected to examination."

Here follows a case history and an account of the physical examination of the subject with a description of the tests.

After he had been put into the hypnotic state, various tests were carried out in order to determine his condition. Various experiments in thought-transference followed : on a slate put behind him were drawn diagrams which he had to reproduce on another slate. A triangle : error. A clock face : error. The figure 8 : he wrote 18. Other figures ; other numbers : errors. The author concludes :

> " Falqui showed some neuropathic condition (an early form of hypnosis) but is in no sense a thought-reader. A large part of his hypnotic phenomena are due to more or less unconscious deception. It is possible that Falqui does not lend himself entirely willingly to this mystification and believes, to some extent, that he possesses the phenomena that he simulates " (54, pp. 91 ff.).

Lombroso's conclusions at the end of his inquiry were that the experiments conducted with the two subjects B. and Regis prove the reality of thought-transmission, just as the experiments with Falqui show that scientific men are able easily to unmask frauds with the means at their disposal.

These " demonstrations " are brought forward by Lombroso in order to defend the veridical character of his experiments with Pickman. Moreover, according to Lombroso, Pickman, B. and Regis all fall into the same category.

In commenting on this inquiry on thought-transmission it must be observed that the results obtained with the two subjects B. and Regis must be treated with great reservation, given the well-known credulity of Lombroso.

While accepting the good faith and the seriousness of purpose of Lombroso and his collaborators in conducting various researches, one cannot think other than that in these cases, as with that of Pickman, he again let himself be deceived by clever tricksters.[1]

[1] The literature on Pickman (1857-1925) is very extensive and the evidence is almost conclusive that he was a highly skilful showman who originally had been associated with Donato and who had learnt a great deal from him. His opinion of Lombroso was hardly flattering. Never did he meet, he said, in the whole of his career such a sucker. It was only necessary for some practical joker to tell him a good story and out came his notebook and " Observation 4613 " was entered ! Sometimes he used to come and see Pickman where he was staying, bringing with him all kinds of complicated apparatus which he applied to Pickman's body for purposes that he could not understand. One day Pickman thought he would try a trick on him, saying that he was now going to test his force on Lombroso's own body and make him feel the force of attraction on his shoulder blades. Getting behind him Pickman seized between his thumb and index finger Lombroso's jacket and pulled it. Lombroso perceived nothing and was absolutely enchanted at the phenomenon. When the master had departed Pickman's secretary said he

In the second half of the nineteenth century the spiritistic movement began to penetrate into Italy from England and France, at first hesitantly and then afterwards ever more openly, according to changes in the political conditions of the various Italian states. This led to a new wave of reports of the higher phenomena of mediumship which were usually poorly documented (cf. 55).

Controlled experiments and documented researches, however, are lacking owing to the absence in Italy of any institute comparable to that such as, for instance, the Society for Psychical Research in London. It is true that such societies were founded, first in Florence through the work of Dr. Olinto Del Torto, then in Milan, through Angelo Brofferio and finally in Turin through the initiative of C. Baudi di Vesme. But these societies were of short duration.

Conclusions

The introduction into Italy of the doctrine and practice of animal magnetism encountered serious initial difficulties, above all by reason of the attitude of the Catholic Church.

Although after some delay, the interest of the scientific world and of public opinion was, however, very keenly shown. Proof may be found of it in the great number of writings regarding mesmeric theories which were published in Italy, especially during the first half of the nineteenth century, together with the starting of various reviews and magnetic societies. The contents of these publications do not differ from those published abroad and, as elsewhere, the currents of opinion which are shown there are essentially three : there are firstly those of fanatical supporters, those of uncompromising opponents, and those, on the other hand, of persons who while not denying *a priori* the existence of the phenomena under discussion awaited some serious proof that would confirm them. Among these last were above all medical men, especially psychiatrists.

In the second half of the century there took place a gradual

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certainly had some cheek, to which Pickman replied that he wanted to know just how far the stupidity of a great scientist could extend. Even the scientific value of his work was criticized by G. Nazari (56) in 1887 in which he emphasized the superficiality of certain of his observations. In his book (18) Stefanoni in Chapters 11 and 12 devotes a considerable amount of space to Pickman which should be consulted by those who find Pickman's work of interest.

Richet seems to have thought that although many of Pickman's experiments in thought-transmission may have been due to muscle-reading, he had perhaps some little developed faculty of cryptaesthesia (37, p. 113). [*Ed.*]

substitution for the terms " animal magnetism " or " mesmerism " of the term " hypnotism ", which, however, remained distinct apart from certain connections from that of " spiritism ".

Generally speaking, the Italian contributions present no original elements except perhaps those theoretical points of view put forward by Dal Pozzo and Morselli.

It is certain, however, that first magnetism and then hypnotism had in Italy moments of great success, not only on the stage but also in hospitals and medical clinics.

During the demonstrations of or the experiments in animal magnetism and hypnotism it seemed that proof was given with a certain frequency of parapsychological phenomena such as thought-transmission, clairvoyance, divination transposition of the senses and so on.

A precise evaluation of the events reported, however, is particularly difficult. Adventurers and tricksters abounded, as did ingenuous if quite sincere persons, and in an appraisal based on works that are often of a partisan character it is hard to distinguish, in the multiplicity of facts and personages, the genuine from the false.

The majority of the cases, moreover, present one with a simple anecdote of no scientific value whatever.

The reports of the organized experiments are, on the other hand, often incomplete and poorly documented. It may be affirmed with certainty that no experiment, of those which have come to our notice, has been conducted under satisfactory conditions from the methodological point of view. When, moreover, in these experiments a minimum standard of control conditions has been reached the higher mediumistic phenomena have not been verified.

We have sought to point out that one of the factors responsible in Italy for the almost total lack of studies conducted with a certain degree of methodological rigour is the absence of any institutions comparable with the Societies for Psychical Research in England and the United States.

For these reasons the literature on the controversies under examination has shown an obviously disappointing appearance.

In the course of our research we have therefore deliberately omitted many reports of experiments in which the higher phenomena were produced but which could not in any way be appraised, either because the subject or the observers are unworthy of attention or because of the nearly total absence of any methodological criterion.

We have nevertheless reported some typical examples while we

have limited ourselves to reporting fully on two series of experiments which, for various reasons, appeared to us to offer, in spite of evident omissions, a high degree of authenticity and for this reason of interest.

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Hypnotism in Spain, Portugal and Latin America

by

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" Ciencia es locura si buen seso no la cura."

Introduction

The present section deals with hypnotism as seen in Spain, Portugal and Latin America. In these countries the emphasis from the first was mainly on the medical aspect of the question, since the attitude of the Roman Catholic Church with its fear of anything paranormal unconnected with religion, and even with it, prevented public demonstrations in which such phenomena were exhibited and confined such experiments to private circles where the results were not described in newspapers and periodicals. Few experiments of any value were reported in the Spanish and Portuguese literature, although a few writers printed some of their observations in other countries whereas other observers, with the exception perhaps of distinguished physicians like Fajardo in the 1880s, confined their remarks almost solely to hypnotism in its therapeutic setting.

Hypnotism in Spain, Portugal and Latin America 1800—1900

In considering the growth and practice of mesmeric or magnetic experiments together with the use of mesmerism for medical treatment in various countries it is important to remember that the development of the subject was much influenced by prevailing conditions at the time. The literacy of the population, the condition and depth of medical studies, the attitude of religious bodies and many other factors, all exercised a marked influence ; and where, as in Spain and Portugal, ecclesiastical power was often dominant, so its approval or censure did much to further or curb the practice of mesmerism in general. Moreover, factors such as those due to previous theoretical expositions of similar subjects did much to delineate the course which was ultimately to be pursued. A good example of this can be seen in Sweden, where as early as 1787 the phenomena exhibited by magnetized subjects were becoming known but, owing to the enormous influence of Swedenborg and his teaching, the results were soon interpreted as messages from the spirit world. It was thus that the descriptions given by the entranced somnambules assumed a spiritistic setting, just as in France it was through the teaching of Cahagnet that the mesmeric trance soon became the mediumistic trance and interest in spiritistic phenomena swamped the manifestations as seen in the usual mesmeric state.

In Spain and Portugal, however, the disturbed political conditions of the first quarter of the nineteenth century were hardly conducive to any wide diffusion of the knowledge of mesmerism and its phenomena. Doubtless small magnetic societies and circles existed and a certain interest among medical men is suggested by a decree of Ferdinand VII (1784-1833) confining magnetic practice to orthodox medicine, of which the exponents had begun to famil-

iarize themselves with mesmeric treatment through the French journals which were beginning to circulate in both countries.

Among those who towards the middle of the century were beginning to concern themselves with mesmerism and its effects was Dr. Ramón Comellas, a Spanish physician who had lived in Mexico and who, as in so many other cases, combined an interest in mesmerism with homeopathy. In his review of animal magnetism (1), which was published in Madrid in 1846, he contributed what seems to have been the first serious book on mesmerism to be issued in Spain, and it is in this volume that the use of mesmerism in medicine was recognized and its employment by lay persons discouraged. The author was himself a member of a Spanish mesmeric and "philanthropico-magnetic" society, as it was called, and thus his influence and the expression of his views as to the proper use of mesmerism had some considerable effect.

Since the methods used by mesmerists elsewhere in Europe were little known in Spain and Portugal, the literature of the subject, scanty as it is, was almost wholly confined to medical sources. For example, a year after the appearance of the book by Comellas, Dr. A. M. Acevedo contributed to a medical journal a series of articles (2) on the essential nature and origin of the magnetic fluid in mankind wherein the medical faculty was given a broad general view of the subject clearly gathered from French and similar sources. In Portugal first hand knowledge was even scantier than in Spain. In 1848 it was reported (3) that at Coimbra, some 175 km. N.N.E. of Lisbon and the seat of an ancient and famous university, a lecturer on animal magnetism knew so little of the subject that he was unaware of the possibility of magnetizing a patient without contact.

By the middle of the century interest in mesmerism especially relating to its use in medical treatment was shown by articles appearing in Spanish medical journals such as *El Siglo Médico* or *España Médica* (cf. 4, 5, 6) and in 1858 a French physician, Pierre Jhotil, described (7) how over two years previously he had left France to practise mesmerism in Brazil, where the regulations, similar to those already existing, permitted mesmeric treatment to be given to patients by registered medical practitioners.

Although in the earlier part of the nineteenth century the study of mesmerism was strictly limited to certain groups, interest in the subject was not wholly absent. In 1832 at a session of the Sociedade de Medicina do Rio de Janeiro it received a letter from Dr. Leopoldo Gamard accompanied by a monograph on animal magnetism to which he hoped the Society would pay serious attention. The paper

was accordingly passed to Mr. Cuissard who was asked to make a report and submit it to the Society, a task which he fulfilled, handing his report in, in October of the same year.

After a short historical introduction in which he mentions the appointment of the French Commission, he stated that in order to arrive at the truth in science, a sceptical examination was necessary, and that this was the way in which the marvellous phenomena of animal magnetism should be investigated. It was, he stated, hardly philosophic to deny what could not be explained, but in this case scepticism was justified in view of the mystifications and errors with which the subject abounded. It was for this reason, he continued, that he found himself both friendly and hostile to animal magnetism at the same time, since on the one hand he had to admit the reality of certain of the results claimed, and on the other because he had to reject all the tricks of the magnetizers, together with the various errors which they had incorporated into their work and the indiscreet experiments to which they so boldly had lent themselves.

These statements by Cuissard certainly suggest that at the time that he was writing his report, mesmerism was being practised in Brazil and that, as in other countries, trickery on the part of the magnetizers and their subjects had been observed. On the other hand, it would seem to be possible that what Cuissard was discussing was magnetism in general, as it is clear from a later section of his report that he was well acquainted with the French investigators and their work, such as Bertrand, Georget and Rostan. As to the desirability of advising the Society to enquire into the matter, he came to a negative conclusion and even regarding the therapeutic aspects of mesmerism he thought that it was somewhat absurd to investigate and use an unknown agent, which it was not possible to control. The risks both to health and morals, he maintained, had been stressed by certain of the French observers and he had therefore come to the conclusion that the paper by Gamard should be rejected. " The science that we study every day, gentlemen," he stated, " is not any kind of occult science and no one moving in scientific circles wishes to become a performer in the market-place."

In 1857 Dr. J. M. N. Garcia published in the *Annaes Brasiliensis de Medicina* a paper in which he discussed the alleged eyeless-sight which had been attributed to somnambules and where he came to the conclusion that this dermal-vision was connected with hyper-aesthesia of touch and sight which were both already recognized by medical science.

In 1861 the Sociedade Propaganda de Magnetismo and Jury

Magnetico do Rio de Janeiro were founded in Brazil and approved by the government, the purpose being to form an association to study magnetism both from the experimental and therapeutic aspects, while avoiding any discussion from the religious or political point of view. Article 14 of the Charter enjoined the members to look out for and expose cases of charlatanism, an exhortation which clearly assumed that cases of trickery in mesmerism were not unknown in Brazil at that time. Although it was proposed by the Society to publish a journal, *O Magnetismo*, I am not aware whether this actually appeared and therefore am unable to say whether many cases of paranormal phenomena were published in its pages and came under the scrutiny of the Society.

Apart from the medical uses of magnetic and mesmeric treatment, the mental state of the somnambules became soon confused with the trance state of the mediums, for by 1861 Spiritualism had begun to interest numbers of persons both in Spain and Portugal. French and Italian literature became more widely known and table-turning and table-rapping had become so popular that the ecclesiastical authorities in Barcelona decided to take drastic action on 9 October 1861 (see 8, 9). Three hundred books and pamphlets were seized and publicly burnt by a priest in full canonicals carrying a cross in one hand and a torch in the other. A huge crowd assembled, some of which approved while others jeered and a few tried to do their best to save a few copies from the flames.

If one considers the literature of the later period it seems clear that the interest in mesmerism was dwindling in proportion as that in the phenomena of the mediums increased. In 1872 Manso (10) and Paillome (11) wrote books in which both subjects were dealt with and the same combination was to be found in 1880 when L. García-Ramón wrote a similar treatise (12).

According to Dr. Francisco Fajardo (28) somnambules who operated in Brazil about 1884 were inserting their advertisements in journals such as the *Gazeta de Noticias* from which it appeared that they combined consultations with exhibitions of fortune-telling by cards.

When the experiments in France on the influence of medicaments at a distance were being conducted by observers like Bourru, Burot and Luys interest was aroused in Brazil and attempts were made to repeat the experiments. These tests were undertaken under the general direction of Professor Erico Coelho, an eminent physician and a friend of Dr. Fajardo. The experiments appear to have been well designed and carried out, but unfortunately the results, it

seems, were wholly negative and nothing was observed which confirmed the astonishing findings of workers in France.

Interest in these experiments naturally led to an examination of the claims for the reality of mental suggestion, for at that period physicians in Brazil were becoming acquainted with the work of Richet and his friends which were being publicized in the *Revue Philosophique*.

The experiments were again mainly under the direction of Coelho who, according to Fajardo, was able to obtain examples of mental suggestion with relative ease. Some of these experiments were concerned with a hysterical female patient, who at the time was being treated by Coelho and proved an excellent subject, willingly agreeing to co-operate in the tests which took place about 1888.

In some of these experiments the subject was first hypnotized and then told to pay particular attention to what was said to her. She was then told that a suggestion was going to be given to her mentally and that she had to carry it out. This order was to read part of a newspaper of the previous day in the hearing of her husband. About an hour later she began to look over a pile of newspapers lying on a table and after a short time she pulled out a page of a newspaper published the previous day, went up to her husband and began to read it aloud. Having finished reading she said that she had already read the column, which was in yesterday's issue.

Later experiments seemed to indicate clearly that the mental suggestion had been received and an attempt made to obey it, but sufficient details are not given to permit of any useful discussion of the results.

Similar phenomena, according to Fajardo, were obtained by other observers such as Professor Francisco de Castro, Luiz Alves and other medical friends of Professor Coelho (28, p. 263).

After discussing the various theories advanced to explain mental suggestion, Fajardo, who admitted that he had never himself had the opportunity to test it, had himself come to believe in it, mainly owing to the standing of those who claimed to have performed successful experiments. In these matters he appeared to agree with the conclusions of Ochorowicz with whose work on mental suggestion he was, apparently, well acquainted. But it was owing to the assurance of his " illustrious master ", Professor Coehlo, that Fajardo had come to the conclusion that since nobody could doubt the integrity of so famous a physician as Coelho, the reality of mental suggestion as defined by Richet could not be denied.

At this period, then, Spanish and Portuguese contributions to the literature of mesmerism were mainly medical and psychological, and there will be found appended to this account (13-37) a selected list of titles drawn from the literature of Spain, Portugal and Latin America. In examining a number of these contributions nothing has been found resembling the experimental material offered in the literature of other countries and indeed, were such records submitted, it is probable that their scientific value would have been even less than that to be found in French, German and Italian sources. The close relation that mesmerism seemed to have to Spiritualism incurred the hostility and condemnation of the Roman Catholic Church and medical men, even when they knew that mesmeric treatment was sometimes efficacious, took good care to confine their interest to such matters as hysteria, anaesthesia and suggestion and did not attempt to inquire too closely into the so-called higher phenomena even if these had been observed by them during their practice.[1]

This condition of affairs is well exemplified in one important case connected with Dr. Alfredo Barcellos, a physician living at Botafogo not far from Rio de Janeiro, who used hypnotism for the benefit of his patients and who was reported to have observed paranormal phenomena on certain occasions although he generally refrained from taking notes at the time which obviously takes away a certain value from his accounts.

The observations of Dr. Barcellos which seem to have been made from 1888 onwards were told by him to Professor A. Alexander of Rio de Janeiro who was a Corresponding Member of the Society for Psychical Research in London (see 38).

Among the patients treated by Barcellos were two where examples of clairvoyance or lucidity were observed. Both were female: one (Miss E.) was a young lady of 17 who was supposed to be suffering from hysteria of an acute type; and the other (Mrs. G. de M.) was a married woman who, after a severe operation, exhibited a number of hysterical symptoms besides falling into a state of nosomania for which a variety of remedies were prescribed, none of which produced much beneficial effect.

[1] This can be seen from the long section on mental suggestion which was included in Dr. Sanchez Herrero's book (17b) where he discusses the experiments at Havre with Gibert, Janet and Ochorowicz and quotes from a case known to him. It seems clear from his account that he accepted mental suggestion but did not attempt to describe any systematic experiments to test his opinion even if he made any with that end in view.

The records of the phenomena occurring with Miss E. are not full or detailed enough to warrant too much credence being placed upon them. It was said that on more than one occasion she was successfully hypnotized at a distance ; and after one of these incidents the whole story was dictated to Professor Alexander by Dr. Barcellos himself on the evening after it had occurred.

He told his interviewer that on 22 June 1896 towards ten o'clock in the evening the father of Miss E., General Carlos de Aranjo, called at his house which was at some considerable distance from Botafogo and asked him to go to his daughter who was suffering from " formidable hysterical attacks " (p. 91). Being very tired, Dr. Barcellos said that he would go early on the following morning but in the meantime he would compensate for his personal absence by sending to her a mental order to go to sleep and during her sleep to recover her calmness and tranquillity. In addition to this the physician gave the General a letter which he was to hand to his daughter if she were in a fit condition to read it. On the other hand, if she were still in a severe hysterical state then he was to apply the letter to her forehead and make passes with it, " all this to provide against the possible failure of the attempt at hypnotization at a distance " which he was about to make.

Having given the General the letter and verified the time Barcellos asked him on arrival home to make careful inquiry " whether the time at which E. had there fallen into a calm and deep sleep coincided, or not, with the hour then noted for the commencement of the experiment ".

On the departure of the General, Barcellos proceeded to concentrate on the suggestion that Miss E. should fall asleep and become calm, relaxed and tranquil. On the following morning when he arrived at the patient's house he found that, about ten minutes later than the time at which the General had left his house, Miss E. had fallen into the hypnotic sleep and was no longer agitated.

Wishing to obtain further evidence and confirmation about this incident and others in which Miss E. apparently showed paranormal abilities, Professor Alexander during the course of the following year discussed the whole affair with the General who confirmed what Barcellos has previously reported although he candidly admitted that his memory of the whole of the material was not entirely perfect. Nevertheless, he gave Professor Alexander a number of other instances which had occurred during the course of his daughter's illness which seemed to indicate that Miss E. was often aware of the presence of Dr. Barcellos at some distance and which

suggested some sort of telepathic *rapport* as between physician and patient, an idea which received some support from Miss E.'s fiancé who was also interviewed by Professor Alexander and who readily replied to questions put to him.

With regard to the second case mentioned above, namely that of Mrs G. de M., the observations, such as they were, extended over the years 1895-6 and the testimony collected to substantiate the evidence in this instance appears to be somewhat stronger than that produced to support the claims of Miss E. The deposition of Dr. Barcellos was dictated to Professor Alexander in November 1896 and is of considerable length (38, pp. 101 ff.)

After her failure to respond to orthodox treatment for the ailments of which she complained after her operation, Mrs G. de M. finally submitted to being hypnotized although at first attempts she proved to be a somewhat intractable subject. Later, however, she became a difficult but at times an excellent subject when she passed into the lighter state and it was in March 1895 that she first showed an example of lucidity of a rather curious kind. Dr. Barcellos had visited her after a professional call on another patient (Mrs. X.) who was suffering from anaemia and slight attacks of fever for which he had prescribed various remedies, leaving his patient in fair health and spirits and talking with her children. When his second patient, however, was hypnotized, she immediately began to make certain statements about Mrs. X. who " had just had a fit " but, not being able to locate Dr. Barcellos, had had to summon another physician who had arrived but was unable to save his patient's life. Had Dr. Barcellos not called at a druggist on his way home and had there been informed that Mrs X. was searching for him, he would not have known till later that he was wanted. As it was, when he arrived at the house Mrs. X. had already expired.

On visiting Mrs. G. de M. for further treatment Dr. Barcellos narrated to her the facts relating to the case of Mrs. X. and asked her how she accounted for these, suggesting that it seemed to be a case of telepathy between herself and him. Mrs. de M., however, violently dissented from this idea declaring that she saw and heard what was going on in Mrs. X.'s house and that she was forced so to see and hear by the guardian angel of Dr. Barcellos whom she claimed to see standing behind the physician.

Apart from the examples of clairvoyance presented by Mrs. de M. she also at times gave some evidence for prevision which, for the most part, concerned persons in the immediate entourage of Dr. Barcellos and his family. For instance, she gave information

about the illness both of his wife and his son (op. cit., pp. 105 ff.) the details of which were at times surprisingly accurate.

A few of the cases concerned relations of Dr. Barcellos himself and so we can, perhaps, feel a greater satisfaction regarding the accuracy and reliability of his reports than we might be inclined to do if the details had been supplied by comparative strangers. Thus in one case relating to his niece, the somnambule not only showed herself aware of the illness but stated that, in spite of her remarkable vitality, the patient was being harmed by the number and nature of the medicaments prescribed. At first Mrs. de M. stated that the girl would recover, but later she declared that she would not survive the wrong treatment to which she was being subjected and that she would succumb to it, a prognosis which unfortunately proved to be correct.

These records from the memory and in some instances from the case-notes of Dr. Barcellos as narrated to and collected by Professor Alexander are the most detailed and interesting that I have noted in Spanish and Portuguese literature relating to hypnotism and the paranormal. Although some of the evidence is open to serious criticism it must, I think, be admitted that the records suggest quite strongly that the two subjects exhibited some remarkable phenomena if we can accept the assurances of the witnesses that normal knowledge of the facts was ruled out. It may, however, be suggested that the sensitives concerned were in fact what are called "mediums" and that the hypnotic conditions were actually mediumistic trances and therefore do not come within this survey.

It can therefore be said in conclusion that Spanish and Portuguese literature contributed nothing of importance towards the study of paranormal phenomena as reported during the course of mesmeric treatment or experimentation. Had the work of the Abbé Faria (1736-1819) been in Portuguese and not in French (39, 40) he would have been mentioned in this Section, since he was one of the earliest mesmeric operators to stress the importance of the subjective element in the phenomena.

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The number in brackets following the name is that in the List of References, R referring to the Russian Section, P to the Polish Section, I to the Italian Section and S to the Spanish, Portuguese and Latin American Section.

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